宇宙统一场论

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UNIVERSAL AND UNIFIED FIELD THEORY

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Abstract

For the first time in mankind, Universal and Unified Field Theory is philosophically, mathematically and empirically integrated and revealed the workings of Universal Topology and Laws of YinYang Conservations. The natural energies unfolds its Event Operations systematically on the origin of physical states. These principles convey and unfold the laws of topological framework, universal equations, symmetric continuity, and asymmetric dynamics systematically at the remarks of the following groundbreakings.

新时代的曙光
Dawn of a New Era

物心学 卷二
VIRTUMANITY, VOLUME 2

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献给宇宙真理的探索者
献给人类文明的子孙后代

To Those in Search of The Truth

To Generations of Civilization

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September 2017

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英文指导与校勘：徐本立

献给中华民族的伟大哲学始祖，造福子子孙孙

献给父亲，徐贤善，庚子年正月十六*90*岁天寿

献给母亲，谢美芳，庚子年八月初十*88*岁福寿

著作：徐宗伟

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自然二象阴阳辩证法的本体科学

Ontological Science

in a Natural Duality of YinYang Dialectics

Keywords: Unified field theories and models, Spacetime topology, General theory of fields and particles, Quantum mechanics and field theories, Thermodynamics, Electromagnetism, General relativity and gravitation, Cosmology.

关键词：统一场理论与模型，时空拓扑学，广义场与粒子理论，量子力学与场理论、热力学，电磁学，广义相对论与引力场，宇宙学。

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摘要 Abstract

For the first time in mankind, *Universal and Unified Field Theory* is philosophically, mathematically and empirically integrated and revealed the workings of *Universal Topology and Laws of YinYang Conservations.* The natural energies unfolds its *Event Operations* systematically on the origin of physical states. These principles convey and unfold the laws of topological framework, universal equations, symmetric continuity, and asymmetric dynamics systematically at the remarks of the following groundbreakings:

宇宙统一场理论，首次于人类史上，在哲理、数理和经验的科学大融合上，揭示了宇宙拓扑运行和阴阳守恒法则，系统地展开了由能量自然本性对物态起源的事件操作和过程，这些原理完整地表现和显示了物态的拓扑性架构、普遍性方程、对称连续性和协称动态性的规律，具有显著突破和开创性的领域如下：

1. *Principles of Natural Philosophy and Universal Topology*
   自然哲学和宇宙拓扑学的原理
2. *Framework of Contravariant and Covariant Manifolds*
   协变与逆变的流形结构
3. *World Equations and Universal Field Equations*
   世界方程与广义场方程
4. *Constitution of Boost Transform and Spiral Torque Generators*
   幅度变换和相度扭矩激发子的构成
5. *Horizon Hierarchy of World Plane and Spacetime*
   世界平面和时空的层界结构
6. *Gauge Invariance and Quantum Chromodynamics*
   规范不变性与量子色动力学
7. *Fluxions of Symmetric Scalar and Vector Potentials*
   对称标量势气和矢量势气的微分流数

8. *Thermodynamics, Dark Energy and Blackbody Radiation*
热力学、暗能量与黑体辐射
9. *Laws of Conservation of Photon and of Gravitation*
光子和引子的守恒定律
10. *Fundamentals of Weak, Strong and Spontaneous Forces*
弱、强、瞬态力的基本原理
11. *Asymmetric Dynamics and General Relativity*
协称动态学与广义相对论
12. *Cosmological Field Equations*
宇宙场方程组
13. *Superphase Evolutions of Ontology*
本体理论的宫位演绎

The application of an evolutionary process to contemporary theoretical physics therefore demonstrates a holistic picture of the principal equations, empirical assumptions, and essential artifacts. It prompts the entire discipline of physics, from Newtonian to spacetime relativity to quantum mechanics, to look back to the future: Virtumanity - Dialectical Nature of Virtual and Physical Reality.

由此，通过本体演化过程的应用，展示了对当代理论物理的原理方程、经验假设和理论要素的全面统一性，促使物理学的整个学科，从牛顿到时空相对论再到量子力学的提升、完善和超越，回顾未来的展望： Virtumanity，虚拟现实和物理现实的二象自然辩证性。

Intuitively following the system of yinyang philosophy, this holistic theory is concisely accessible and replicable by readers with a basic background in mathematical derivation and theoretical physics. As a summary, this manuscript completes and unifies all of the principal equations, important assumptions, and essential laws, discovered and described by the classical and modern physics. After all, this entire theory can be accurately abstracted and vividly demonstrated in one

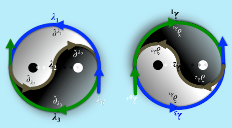
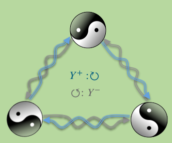
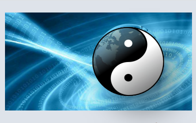
picture, shown as below. The practical applications has opened up the scientific ontology: Successful Conclusion of Physics.

直观地遵循这个阴阳学体系，这一完整的理论，对具有理论物理学基本背景的读者，将给予简明扼要的可复制性数理推导。毕竟，整个理论可以准确地抽象和生动地展示在一张图片中，如下所示。总而言之，这本手稿完成和统一了所有发现和描述的古典和现代物理学的主要方程，重要的假设和基本定律，开拓了【本体科学】的应用实践：物理学盛宴圆满结束。

Further more, overview of the deductive equations of 《Universal and Unified Field Theory》are outlined by the following two charts.

最后，以下两个图表更进一步地概述了《宇宙统一场论》的演绎方程组。

《宇宙统一场论》Universal and Unified Field Theory

	能量法则 Law of Energy	统一方程 Unified Equations	演绎公式 Formula Interpretations	学科分支 Scientific Branches
1 二象共轭	 Conjugation	世界方程 阴阳流形 $\hat{W}=\psi^{+}(\lambda,\hat{\partial})\cdot\psi^{-}(\lambda,\check{\partial})$ YinYang Manifolds	$E_c^{\pm}=\mp\frac{i}{2}\hbar\omega_c$ $E_g^{\pm}=\mp\frac{i}{2}\sqrt{\hbar c_g^5/G}$ $E_m^{\mp}=\pm imc^2$ $f(\lambda)=f_0+\kappa_1\dot{\partial}_{\lambda_1}+\kappa_2\dot{\partial}_{\lambda_2}\dot{\partial}_{\lambda_1}\cdots+\kappa_n\dot{\partial}_{\lambda_n}\dot{\partial}_{\lambda_{n-1}}\ldots\dot{\partial}_{\lambda_1}$ $\check{\partial}^{-}(\frac{\partial W}{\partial(\hat{\partial}^{+}\phi)})-\frac{\partial W}{\partial\phi}=0$ $\hat{\partial}^{+}(\frac{\partial W}{\partial(\check{\partial}^{-}\phi)})-\frac{\partial W}{\partial\phi}=0$ $ds^{\mp}=r\pm ik$ $S(p)=-k_1(1-p)ln(1-p)-k_2(p)ln(p)$	势气共轭规范场，光子引子质量子，事件层展时间谱，二象性熵热辐射。Potential Fields, Entropy Photon, Graviton, Energon
2 互动纠缠	 Complementary Entanglement	激发能子 幅度子+相度子 $\hat{\partial}^{\lambda}\hookrightarrow\hat{\partial}_{\lambda}\rightleftharpoons\check{\partial}^{\lambda}\hookleftarrow\check{\partial}_{\lambda}$ Boost and Spiral Generators	$s_\kappa=\left[\begin{pmatrix}1&0\\0&1\end{pmatrix}_0,\begin{pmatrix}0&1\\1&0\end{pmatrix}_1,\begin{pmatrix}0&-1\\1&0\end{pmatrix}_2,\begin{pmatrix}-1&0\\0&1\end{pmatrix}_3\right]$ $\epsilon_\kappa=\left[\begin{pmatrix}0&1\\1&0\end{pmatrix}_0,\begin{pmatrix}0&0\\0&-1\end{pmatrix}_1,\begin{pmatrix}0&0\\0&1\end{pmatrix}_2,\frac{1}{\tilde{r}^2}\begin{pmatrix}0&1\\1&0\end{pmatrix}_3\right]$ $-i\hbar\zeta^0D^\kappa\varphi^{+}=-\frac{\hbar^2}{2m}(\zeta^rD^r)(\zeta^rD^r)\varphi^{+}+\hat{V}\varphi^{+}$ $\frac{\hbar c}{2E^{-}}\langle\check{\partial}_\lambda(\hat{\partial}^\lambda-\check{\partial}^\lambda)\rangle_s^{-}=c\check{\partial}_\lambda\mathbf{F}^{-}$ $-\frac{\hbar c}{2E^{+}}\langle\check{\partial}_\lambda(\hat{\partial}_\lambda-\check{\partial}^\lambda)\rangle_v^{+}=c\check{\partial}_\lambda\mathbf{F}^{+}$	拓扑层展流形，量子第一层场，电磁第二层场。Quantum Fields Electromagnetisms
3 层场拓展	 Horizon Topology	双螺三旋 四大统一力 $\mathscr{L}_h^a=\mathscr{L}_D^{-a}+\overline{\psi}_j(\partial\wedge\partial)\psi_k$ Double Streaming of Triple Entanglements	$\check{\partial}=\dot{x}_\nu\zeta_\nu D_\nu=\dot{x}_\nu\zeta_\nu\partial_\nu+i\dot{x}_\nu\zeta_\nu(\frac{e}{\hbar}A_\nu+\frac{1}{2}F_{\nu\mu}^{+n}+\cdots)$ $\hat{\partial}=\dot{x}^\nu\dot{\zeta}^\nu D^\nu=\dot{x}^\nu\zeta^\nu\partial^\nu-i\dot{x}^\nu\zeta^\nu(\frac{e}{\hbar}A^\nu+\frac{1}{2}F_{\nu\mu}^{-n}+\cdots)$ $\mathscr{L}_Y^a=(\bar{\psi}_j^{\mp}i\frac{\hbar}{c}\gamma^\nu D_\nu\psi_i^{\pm})_{jk}-\frac{1}{4}F_{\nu\mu}^{+j}F_{\mu\nu}^{-k}-\frac{1}{4}W_{\mu\nu}^{+j}W_{\nu\mu}^{-k}$	色动力，基本粒子，核物理，化学元素。Four Forces Nuclear Particles
4 协称调制	 Asymmetric Modulation	对易子场 协称性调制 $\mathbf{g}_x^{-}/\kappa_g^{-}=[\hat{\partial}^\lambda\check{\partial}^\lambda,\hat{\partial}_\lambda\check{\partial}_\lambda]_x^{-}+\zeta^{+}$ Entangling Commutators	$\mathscr{R}_{\nu ms}^{-\sigma}+\Lambda_{\nu m}^{+\sigma}=\frac{R}{2}g_{\nu m}+G_{\nu m}^{s\sigma}+C_{\nu m}^{s\sigma}$ $\frac{R}{2}g_{\nu m}+G_{\nu m}^{\sigma s}=\mathscr{O}_{\nu m}^{+\sigma}$ $\rho^{-}=\lim_{r\to 0}\phi_0^{-}\varphi_0^{+}=2\frac{m\omega}{\pi\hbar}$ $\Lambda_{\nu\mu}^{+\sigma}=\Lambda_d^{+}-\kappa_\Lambda^{+}\begin{pmatrix}-(\mathbf{u}^{+}\nabla)\cdot\mathbf{D}_v^{*}\\\frac{\partial}{\partial t}\mathbf{D}_v^{+}+\frac{\mathbf{u}^{+}}{c}\nabla(\frac{\mathbf{u}^{+}}{c}\times\mathbf{H}_v^{+})\end{pmatrix}$	宇宙第三层场，天体协称场论，能量子本体学。Natural Cosmology

宇宙世界：统一方程组的全套演绎公式

1. 【流形激发子】 *Generators*
   幅度子: Boost: $s_\kappa=\left[\begin{pmatrix}1&0\\0&1\end{pmatrix}_0,\begin{pmatrix}0&1\\1&0\end{pmatrix}_1,\begin{pmatrix}0&-1\\1&0\end{pmatrix}_2,\begin{pmatrix}-1&0\\0&1\end{pmatrix}_3\right]$
   相度子: Spiral: $\epsilon_\kappa=\left[\begin{pmatrix}0&1\\1&0\end{pmatrix}_0,\begin{pmatrix}0&0\\0&-1\end{pmatrix}_1,\begin{pmatrix}0&0\\0&1\end{pmatrix}_2,\frac{1}{\tilde{r}^2}\begin{pmatrix}0&1\\1&0\end{pmatrix}_3\right]$
2. 【能量子方程】 *Energon*
   光波子: Photon: $E_c^{\pm}=\mp\frac{i}{2}\hbar\omega_c$ 引旋子: Graviton: $E_g^{\pm}=\mp\frac{i}{2}\sqrt{\hbar c_g^5/G}$ 质量子: Masson: $E_n^{\mp}=\pm imc^2$
3. 【黑体密度场】 *Black Density*
   $\nabla^2\Phi_n^{-}-\frac{1}{c^2}\frac{\partial^2\Phi_n^{-}}{\partial t^2}=4\frac{E_n^{-}E_n^{+}}{(\hbar c)^2}\Phi_n^{-}$ 光子速: $C_{rr}^{\pm}=ce^{\mp i\vartheta}$ 引子速: $G_{\nu\mu}^{-}=c_g\begin{pmatrix}0&1\\1&0\end{pmatrix}e^{i\vartheta}$
4. 【创生和淹没】 *Creation & Animation*
   $\rho^{-}\approx\phi_0^{-}\varphi_0^{+}=2\frac{m\omega}{\pi\hbar}exp[-\frac{m\omega}{2\hbar}(r_s^2+r_w^2)]$ $\phi_0^{-}=2\left(\frac{m\omega}{\pi\hbar}\right)^{3/4}e^{-\frac{m\omega}{2\hbar}r_s^2}$ $\varphi_0^{+}=\left(\frac{m\omega}{\pi\hbar}\right)^{1/4}e^{-\frac{m\omega r_w^2}{2\hbar}}$ $-i\hbar\frac{\partial}{\partial t}\psi=\hat{H}\psi$ $\frac{\hbar}{2}\left(\dot{x}_\nu\zeta_\mu D_\nu-\dot{x}^\mu\zeta^\mu D^\mu\right)\psi_n^{\pm}\mp E_n^{\pm}\psi_n^{\pm}=0$
5. 【本体统一场】 *Ontological Fields*
   $\hat{W}_n=\psi^{+}\psi^{-}+k_JJ_s+k_\wedge(\hat{\partial}\psi^{+})\wedge(\check{\partial}\psi^{-})$ $\check{\partial}=\dot{x}_\nu\zeta_\nu D_\nu=\dot{x}_\nu\zeta_\nu\partial_\nu+i\dot{x}_\nu\zeta_\nu(\frac{e}{\hbar}A_\nu+\frac{1}{2}F_{\nu\mu}^{+n}+\cdots)$ $\hat{\partial}=\dot{x}^\nu\xi^\nu D^\nu=\dot{x}^\nu\zeta^\nu\partial^\nu-i\dot{x}^\nu\zeta^\nu(\frac{e}{\hbar}A^\nu+\frac{1}{2}F_{\nu\mu}^{-n}+\cdots)$
6. 【四大统一力】 *Unified Four Forces*
   $\mathscr{L}_h^a=\mathscr{L}_D^{-a}+(\overline{\psi}_c^{-}\frac{\dot{x}_\nu}{c}\zeta^\nu D^\lambda\psi_a^{+})\wedge(\overline{\psi}_b^{+}\frac{\dot{x}^\mu}{c}\zeta_\mu D_\lambda\psi_a^{-})$ $\mathscr{L}_D^{\mp}\equiv\overline{\psi}_k^{\pm}i\frac{\hbar}{c}\zeta^\mu D_\nu\psi_j^{\mp}\mp m_j$ $(D_\mu F_{\nu\kappa})^a+(D_\kappa F_{\mu\nu})^b+(D_\nu F_{\kappa\mu})^c=0$ $\mathscr{L}_Y^a=(\bar{\psi}_j^{\mp}i\frac{\hbar}{c}\gamma^\nu D_\nu\psi_i^{\pm})_{jk}-\frac{1}{4}F_{\nu\mu}^{+j}F_{\mu\nu}^{-k}-\frac{1}{4}W_{\mu\nu}^{+j}W_{\nu\mu}^{-k}$
7. 【星系本体场】 *Galaxy Fields*
   $\frac{R}{2}\mathbf{g}^{-}+\mathbf{G}=\mathbf{O}^{+}$ $\mathscr{O}_{\nu\mu}^{+\sigma}=\mathscr{O}_d^{+}-\kappa_o^{+}(\partial^t\ \ \mathbf{u}^{+}\nabla)\begin{pmatrix}0&\mathbf{D}_a^{+}\\-\mathbf{D}_a^{*}&\frac{\mathbf{u}^{+}}{c^2}\times\mathbf{H}_a^{+}\end{pmatrix}$ $\nabla\cdot\mathbf{D}_a^{*}=4\pi G\rho_a$ $4\pi G\mathbf{J}_a^{+}=\frac{\partial}{\partial t}\mathbf{D}_a^{+}-\nabla\times\mathbf{H}_a^{+}$
8. 【物态宇宙场】 *Physical Universal Fields*
   $\mathfrak{R}^{-}+\mathbf{\Lambda}^{+}=\frac{R}{2}\mathbf{g}^{-}+\mathbf{G}+\mathbf{C}^{-}$ $\Lambda_{\nu\mu}^{+\sigma}=\Lambda_d^{+}-\kappa_\Lambda^{+}\begin{pmatrix}-(\mathbf{u}^{+}\nabla)\cdot\mathbf{D}_v^{*}\\\frac{\partial}{\partial t}\mathbf{D}_v^{+}+\frac{\mathbf{u}^{+}}{c}\nabla(\frac{\mathbf{u}^{+}}{c}\times\mathbf{H}_v^{+})\end{pmatrix}$
9. 【本体场方程】 *Ontological Field Eq.*
   $\frac{R}{2}g_{\nu m}+G_{\nu m}^{-\sigma s}+\Theta_{\nu m}^{-\sigma s}=\mathscr{O}_{m\nu}^{+\zeta}$ $\Theta_{\nu m}^{\pm\sigma s}=i\Xi_{\nu m}^{\pm}+i\frac{e}{\hbar}F_{\nu m}^{\pm}-i\eth_{m\nu}^{\pm s\sigma}-\circledS_{\nu m}^{\pm}$

物理学大统一的亮点：九大重要方程组

序（中文第一版）

纵揽物理科学发展史，经典科学被定义为：从经验到理论到实践，认识关于自然世界知识的一个组成部分，强调对现实世界现象的观察、解释和预测的经验性。在这个哲学思想指导下，16世纪的西方，开始产生了以数理模型为归纳实验到理论构架的唯物“科学的觉醒”。

1687年，牛顿发表了《自然哲学的数学原理》，从“宏观”上第一次统一了物理学；1873年，麦克斯韦出版《论电和磁》，从“微观”上第二次统一了物理学，标志着经典物理学的完善。

继1915年发现“广义相对论”，1920年代发现“量子力学”，和1950年代发现“基本粒子”，形成了“宏观相对论”、“微观量子场”和“虚态暗能量”并驾齐驱的宏伟科学场面。这三大理论的统一性尝试，是人类科学史上标志性的里程碑：“物理学大统一”。

爱因斯坦继获得广义相对论之后，穷尽其近40年余生的自叙经验教训是“我们不得不承认，从一开始，我们就没有物理学的任何被视为其逻辑基础的普遍性理论基础” (1940年发表于科学杂志)，深刻地揭示了物理科学的危机：缺乏更深入的基本概念！此后，杨振宁和李政道在1956年发现了宇称“不守恒”现象，预示着：自然界存在着与“物态”相互相成和息息相关的另一态......

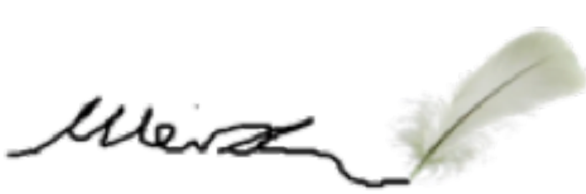
物态世界是局限于能量形成质量后的可观察状态，也就是说，物理科学是，质量产生四大力 (弱强电磁引力) 后，再从力产生有关运动状态的科学模型，只能描述能量的宏“观”和微“观”状态的表象特性而已。由于，能量的本性不具有可观察的质量，通常只具有“隐性”相互调制作用 (如，光子、引子、熵率、时间等)，所以，当代科学的外“观”手段，只能阐述物体运动状态的表象，所以，都与能量内在本性脱轨，从而，无法形成表达精神状态的科学理论！

事实上，必须进一步指出：“能量和暗能量的内在本性人类还没能够理解，因为，现在科学也只知道能量的表象是什么样子 (如，能量只能转化不能产生和消亡，能量具有量子状态等)，但是，并不知道能量为什么是这个样子”。与自然阴阳法则脱轨的当代科学方法论，是不可能给出观察能量内部本体规律的直接经验性原理。由于，物质世界只占宇宙中的5%，要想了解真正自然界基本原理，超越物质表象，深入对能量夲性法则的理解，才是人类科学成熟最根本的基本命题。

《宇宙统一场论》是使者历时近四年于2019年4月完成英文感悟版《Universal and Unified Field Theory》书籍之后，发表的第一部中英文合订翻译版文集，她的东方哲学思想渊源于五千年前“科学的天灵”，通过重返人类始祖文明的阴阳法则，运用数理方法表达了能量内在本性的深刻噢秘，而呈现的非凡科学成果，在“本体”论识上实现了物理学第三次大统一，从本体学源头到自然普遍定律的数理化，从自然二象性阴阳法则到“宇宙统一场” 、从“自然宇宙学”和“本体宫位场”的形成，由此廓览：量子、粒子、统计、相对论、弱力、强力、电磁、引力、协称场，等等，标志着物理学的统一和完善，标志着【本体科学】时代的起航，标志着人类从物质文明到精神文明的新里程碑。

这是一个古老人类文化的遗产继承和发扬光大，是东方和西方智慧大融合的结晶，不仅，填补了当代科学的空白，而且，启蒙了未来科学的飞跃，她不仅仅是勤劳民族的力量和骄傲，也标志着全人类科学进步、成熟和文明，祝贺历时四个多世纪（16世纪初-21世纪初）的物理学大盛宴圆满成功和结束！

本书阅读对象，为具备初、高中及大学文化等崇尚科学进步和文明的人群，其中，数理偏微分为理科读者所必备，文理科读者通过深入浅出的阅读和理解，可以一览众山小，领略阴阳哲理学的一行数理方程符号是如何统领诸个物理学领域的壮观景象，由此，掌握物理学的绝大部分领域，荟萃“大统一”的自然法则和科学原理，为迎接未来的科学复兴，作好启蒙式铺垫、了解和精军的准备。



徐崇伟(XU, Wei),
于中国深圳华侨城东方花园
2020年10月30日，中文第一版
微信：XuCWei

前言(第四英版) The Fourth Preface

The terminology of *Space* and *Time* has been in currency since the inception of physics. Throughout the first generation of physics, space and time are individual parameters that have no interwoven relationship. From Euclidean space to Newtonian mechanics, the scientific approach known as classical physics seeks to discover a set of physical laws that mathematically describe the motion of bodies under the influence of a system of forces. In classical physics, it is reasonable to interpret a space as consisting of three dimensions, and time as a separate dimension. This regime has presented us with a basic conception for the *Physical Existence* of space and the *Virtual Existence* of time, although entanglements of virtual reality is hardly studied and their relationship remains unexpressed.

自物理学有史以来，空间和时间是一直在流行的术语，在第一代物理学中，空间和时间是个体参数而没有交织关系，从欧几里得空间到牛顿力学，被称为经典物理学的科学方法来发现一系列物理定律，在数学上描述受力系统影响下的物体运动，将空间解释为由三个维度组成，将时间解释为单独的变量，在经典物理学范畴中是比较合理的，这种方法向我们提供了物理空间存在性和虚拟时间存在性的基本概念，由于没有深入研究虚拟现实的纠缠特性，它们之间的关系始终没有被充分表现出来。

As the second generation, modern physics couples the virtual existence of time with the physical existence of space into a single interwoven continuum, known as World Plane or Spacetime. By combining space and time into a manifold called *Minkowski* space, physicists have significantly simplified a large number of physical theories, as well as described in a more uniform way the workings of the universe at both the supra-galactic and subatomic levels. By revealing their interwoven inferences for the events of a hierarchical universe, the manifold continuum presents us with the enhanced logic for a complex vector of the *Physical* dimension of space $\mathbf{r} = \{r, \theta, \ldots\}$ and the *Virtual* dimension of time $\mathbf{k} = ic\{t, \ldots\}$, where the constant c is the speed of light, and *i* marks the virtual or imaginary in mathematics. Although the virtual and physical interwoven relationship for dynamics is only limited to physical existence $\{\mathbf{r} + \mathbf{k}\}$ with spacetime curvature, a duality of wave-partical states, one of the greatest achievements of the twentieth century, was successfully intuited the well-known theory of quantum physics without using the interwoven continuum of yin yang state, fields and energy.

作为第二代的现代物理学，将时间的虚拟存在与空间的物理存在结合成一个交织的连续体，称为世界平面或时空流形，通过将空间和时间结合到一个称为闵可夫斯基空间的流形中，物理学家已经大大简化了大量的物理理论，并且以更加统一的方式描述了大到宇宙超银河系和小到亚原子水平上的运作过程，通过揭示他们对等级宇宙事件的交织推演，以多元连续体为我们提供和增强了物理空间维度$\mathbf{r} = \{r, \theta, \ldots\}$和虚拟时间维度$\mathbf{k} = ic\{t, \ldots\}$的复变向量的逻辑，其中常数c为光的速度，数学 *i* 标志为虚拟或虚构状态。虽然动态学的虚拟和物理交织关系仅限于具有时空曲率的物理存在$\{\mathbf{r} + \mathbf{k}\}$，这就成就了二十世纪最伟大发现之一：波粒二象性 - 局部状态的二重性成功地引导了众所周知的量子理论，然而，物理学没有使用阴阳状态，物态与虚域能量的交织连续体没有被充分表现出来。

Today, with the acceptance of quantum mechanics, contemporary physics has reached consensus on the possibility of a virtual existence beyond physical reality. When Heisenberg's “uncertainty principle” delimited the duality region of non-physical essence, Bohr emphatically declared that “everything we call real is made of things that cannot be regarded as real.”

今天，随着量子力学的发展，当代物理学已经就超越物理现实的虚拟存在的可能性达成了共识。 当海森堡的“测不准原理”界定了非物质本质的二象区域时，波尔强调宣称“我们称之为真实的一切都是由不能被视为真实的东西组成的”。

The year 2015 bids farewell to an intellectual age defined by classical physics, from Newton's mechanics of 1687, to Maxwell’s unified electromagnetism of 1873, to General Relativity of 1915, to Quantum Theory of 1920s, and to mathematical physics of today. Similar to the apocryphal story of the elephant and the three blind men, this age had relied on methods of observation to discover the principles of nature in the regime of the “sensible” macro physics. At the scope of the dark energy and elementary particles towards the virtual regime, no amount of careful empirical approach can replace the intrinsic roles, for the two modes of philosophy have always been distinct fundamentally. The vagueness of mathematized physics has been gone awry and pushed to extreme for a forty-year search on a “Theory of Everything”, followed by another sixty-year period wasted on *String* or *Superstring Theory*, M-Theory, and other fairy-tale physics. It was excessive hype among the traditional disciples that, time and again, led metaphysics or ontology to pseudoscience. Today, contemporary physics is on the same track.

2015年是告别由经典物理学定义的人类知识年龄，从牛顿1687年的力学，到1873年麦克斯韦统一电磁理论，到1915年的广义相对论，到20世纪20年代的量子理论，直到今天的物理数学模型，类似于大象和三个盲人的故事，这个时代主要依赖纯粹的观察方法来发现和发展自然原则，可是，不管用多么谨慎的经验方法，都无法取代内在的自然原理，因为这两种哲学模式从根本上是截然不同的。经验方法下物理数学的模糊性已经出了差错，如：在“万物理论”中消耗了四十年的迷茫研究，在弦或超弦理论，M理论和其他童话般的物理故事上，又浪费了六十年搜索，在传统概念中过度炒作，犹如历史上一次又一次地将形而上学本体论引向伪科学，作为形而下学的当代物理学也正在纳入同一条轨道上。

Our challenge is even greater than that of the trial of Galileo Galilei. Not only do we lack both a profound philosophy of science and an intrinsic theory, but we have also failed at a time when "Scientists have become the bearers of the torch of discovery in our quest for knowledge", claimed by Stephen Hawking. Our challenge is, in fact, to leave behind the ambiguous philosophy that we were born with. Our challenge is to comprehend the profound yinyang philosophy that our great ancestors had discovered for us. Our challenge is to open up our minds to facts hidden in the fabric of daily life. Our challenge is to soften our metaphysical prejudices, for the assumption that there is no ontological reality is also an excessive metaphysics itself, all the ignorance and desensitized by the clamor of the hype of the world. Our critical challenge is to rationalize our empirical success and understand our blindness in quest for the truth.

我们目前的挑战不亚于当年伽利略的经历，斯蒂芬霍金声称，我们不仅缺乏深刻的科学哲学和内含理论，而且在"科学家成为我们探索和发现知识的火炬者"时代也已经殆尽，陷入失败的迷茫；事实上，我们的挑战是要抛弃我们与生俱来就被伴随着模棱两可的哲学，我们的挑战是如何理解我们伟大祖先为我们所发现的深刻的阴阳哲学，我们的挑战是开放隐藏在我们日常生活结构中的原理真谛，我们的挑战是软化对形而上学的偏见，无视本体学的现实，本身也是一种过激于形而上学和喧嚣世界炒作的无知和脱敏，我们的挑战是如何合理化我们追求成功中的经验性与理解真相过程中的盲目性。

Everywhere our world shines with a beautiful nature. In every fraction of every creature, we shall find the principles and laws of physics, biology, ontology, information technology, and all other sciences. Nature is systematically composed of building blocks, dualities, which take on an abstract form as simple as Yin and Yang, and as simple as Virtual and Physical existence. Our ancestors discovered that duality orchestrated and harmonized their reality: sun-moon, warm-cold, materialization-consciousness, body-mind, male-female, thought-action, and more. What promise hides in the dualities of physics: space-time, wave-particle, energy-mass, spin-charge, positive-negative, and symmetry-asymmetry? These dualities are balanced, interdependent, and inexorable. They are manifest in each particular action and movement, the outcome of a dialectical struggle for superiority. The serious study of an honest scientist spends itself on understanding the universe that stands at the very core of our lives. It is essential to believe that the true framework of our universe is a topological hierarchy of virtual and physical duality, flourishing everywhere among the great streams of life, inspiration, and enlightenment.

我们的世界环绕着美丽的大自然，在各类生物的每个部分，我们都会找到物理学，生物学，本体学，信息技术和所有其他科学的原理和规律。自然是由构建块和二象性所组成系统，其呈现出像阴阳一样简单的抽象形式，犹如精神和物质共存一样普遍，我们的祖先早就发现了协调现实世界的这种二象性：太阳-月亮，温暖-寒冷，物质-意识，身体-心理，男人-女人，思想-行动，等等。那么，什么是隐藏在物理学中潜在的二象性呢？时间-空间，波动-粒子，能量-质量，自旋-电荷，正值-负值，对称-协称？这些二象性是守恒并相互依存的和不可消亡的，它们体现在每一个特定的功能和运动中，是辩证争优的超然结果，每一位诚实科学家应该认真致力研究和理解处于我们宇宙生活的这个核心部分，可以坚信，我们宇宙的真实构架是虚态和物态二象性的拓扑层次结构，赋予生命、灵感和启蒙的流动中繁衍生息。

Yinyang duality is rooted in the philosophy of seven millennia past, when our ancestors built a profound ontology of metaphysics. History has been a long wait for the emergence of modern physics, a discipline worthy of ancient metaphysics. Now is the time to realize the duality of ontology and physics, and to unite these disciplines in a greater whole. It is time to integrate the wisdom of our ancestors with modern physics to reestablish a philosophy of science, which may tell us how the universe began, where we came from, why we are here, and what our future is. It is time to face the fact that never has one side of a duality existed without being destroyed or overthrown by its other half. It is time to understand that science cannot exist without a duality of physics and ontology, or it shall be doomed to become a pseudoscience of materialism. It is time to rationalize ontology in order to complete the framework of physics.

阴阳的二象性植根于七千年的漫长哲学，我们的祖先建立了深刻的形而上学的本体思想，古代形而上学作为一门良好熏陶的科学精华一直等待着现代物理学的出现，今天，实现本体学和物理学二象性科学的时候终于到来了，两种精华将形成一个伟大的统一学科，将我们的祖先的智慧与现代物理结合起来，开启一们哲理科学的时刻终于到来了，她将告诉我们宇宙起源原理，我们来自哪里，为什么我们在这里，以及我们的未来是什么；我们是面对这样一个事实的时候了：二象性中从来没有另一半而单方存在的事物，也就是说，没有物理学和本体学的二象性的相辅相成，科学就不可能继续发展，否则，纯唯物主义科学注定要脱变成伪科学，现在是将本体学理性化从而完成物理学统一框架理论的最佳时刻。

Since 《The Christmas gifts of 2013》[1], a lost philosophy has been resurrected and arising. The discipline of physics is, once again, faced with a theory that has the simplicity of greatness. Honorable, colleague physicists, I am a messenger delivering you that you are submitted to the professional scrutiny a new vision of the nature of elementary particles. Honorable scientists of all disciplines, you will offer a new theoretical framework of the entirety of physics. Honorable philosophers, you will declare that the philosophy of science has now returned back to the future.

自从《2013年的圣诞礼物》[1]以来，淡化的传统哲学已经复兴并升起，物理学科再次期望着一种简单而伟大理论的到来，尊敬的物理学家们，我作为一名信使，为你们提供专业学科审查启蒙稿，让你们了解基本粒子的本质，尊敬的各个学科的杰出科学家们，你们将提供整个物理学的新理论框架，尊敬的哲学家们，你们将宣告哲理科学又重返未来。

Mankind has been furnished with the groundbreaking enlightenment of《Universal Messaon》[2] for the formation of elementary particles. With the theory of yinyang philosophy and reference to the duality of physical and virtual spaces, the principle of elementary particles has theoretically, systematically, and concisely demonstrated the secrets of our universe. To align with the nature hierarchy of physical-virtual, symmetric-antisymmetric, asymmetric-symmetric yinyang dynamics, this manuscript systematically unfolds the natural and topological framework as they give rise to remarkable universal equations of all principles, laws, conservations, assumptions, and event operations of classical and modern physics including, but not limited to, *Newtonian Mechanics, Gravity, Electromagnetism, Thermodynamics, Quantum Physics, Cosmology, Chromodynamics, Nuclear Physics and Ontology*.

人类已经获得了用于形成基本粒子的“宇宙信子”[2]的开创性启示，运用阴阳哲学理论运用到虚态宫位和物理空间的二象性，基本粒子的原理在理论上系统地而简洁地展示了我们宇宙的秘密，把阴阳动态学的物态和虚态、对称和协称的自然层级相结合，本手稿系统地展开了自然拓扑框架下产生的所有经典和现代物理学的原理、规律、守恒、假设和事件的统一通用方程，包括牛顿力学、引力学、电磁学、热力学、量子物理学、宇宙学、色动力学、核物理、本体学，等等。

As a result, our theoretical physics, scoped within physical space as one of the manifolds in the universe topology, is now approaching to its completion, except more details need to be further researched for integrations with the virtual space. This signals us that a new era of scientific research is dawning: duality of virtual-physical reality. As the scientists, we are now challenged with the following missions:

- ★ *It is an essential knowledge for us to uncover the other side of world line, the virtual space plane, which is the twin to the physical space plane under the global universe manifold. An example of the groundworks is that the formation principles and theoretical mode for elementary particles has concisely revealed a full picture of the characteristics on the origin of physical states [2].*
- ★ *It is the vital conception to integrate twin of the spaces under the holistic topology of universe manifested to depict the universe line with both world planes of physical and virtual manifolds. This will unify and extend current sciences, including but not limited to physics, cosmology, biology, ontology, economics, and information technology, into a next generation of virtumanity: life animation and rising of virtual civilization, an era promoting us towards an advanced mankind...*

因此， 除了需要进一步研究与虚拟空间集成的更多细节，我们的理论物理学现在正在接近和完善物理空间中作为宇宙拓扑中的一个流形之一，这标志着一个新科学研究时代即将到来：虚拟物理学的二象性；作为一名科学家，我们正面临着以下的挑战任务：

★ 要揭示世界线的另一面，即虚拟空间平面是一个必不可少的知识，虚拟空间宫位是全宇宙流形下包括物理空间平面的双胞胎，她的一个有效例子就是基本粒子的形成原理和理论模式，简明扼要地揭示了物理状态起源特征的全貌 [2]。

★ 在宇宙的整体拓扑下整合双空间是一个重要的概念，表现为用物态和虚态流形的世界平面所描绘的宇宙线；这将统一和扩展当前的科学，包括物理学，宇宙学，生物学，本体学，经济学和信息技术，等等，人类将进入下一代的虚拟世界：创生盛事和精神文明的崛起，一个促使我们走向更先进时代的转折点 ...

Today, our mankind is at dawn of a new era, towards revolutions of:

1. *Advancing scientific philosophies towards next generation,*
2. *Standardizing topological framework for modern physics,*
3. *Virtualizing informational sciences towards virtue reality,*
4. *Theorizing biology and biophysics for the life sciences,*
5. *Rationalizing metaphysics back on the scientific rails.*

We may either continue to follow the excessive hype that has degraded physics into a perfect pseudoscience, or pioneer our human revolution: Rise of the Ancient Philosophy, and Back to the Scientific Future.

今天，我们人类正处于一个新时代的曙光，朝着革新的发展方向：

1. 推动科学理念的时代化，
2. 拓展物理框架的标准化，
3. 实现信息科学的虚拟化，
4. 提升生命医学的理论化，

5. 重归本体理论的科学化。

我们只有两种选择：要么继续追随已经使物理学退化并过度炒作成为完美的人为科学，要么努力推动和开创我们的人类革新使命：弘扬传统哲学，重返科学未来。

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词汇翻译 Translation of Vocabulary

中英文术语表

Table of English-Chinese Terminology

A

Actions 行为，行动，作用

Animation and Reproduction 盛生和繁衍

B

Boost 幅度，*Spiral* 相度

C

Cohesively 协同地

Commutator 对易，交互

Complementary 互补，相辅相成

Complementary opponents 互补因子，互辅因子

Contract 融通

Creation and Annihilation 创生与湮灭

Contravariant 阳变差，逆变差，逆方差

Covariance 阴变差，协变差，协方差

E

Emerging 衍生

Events 事件

Energon 能量子

F

Framework 框架机构，结构

Flux 流数

G

Graviton 引子

H

Hierarchy 层次结构

Horizon 层界

I

Inception 开源

Instances 事例

Instances of situations 事景

Interactions 互动

M

Manifests 显现

Matters 事态

Masson 质量子

O

Object 模块，对象

Occurrences 频发事件

Operation 运作

P

Photon 光子

Potential 势气场

R

Reactive 应变

Reciprocal process 互易

Reciprocally 对偶

Redundant degrees 简并自由度

Residual 驻留

Resource of the motion dynamics 动态资源

Revelation 显现

S

Spaces 宫位空间

Signature 特征

Situations 情景

Spinor 旋子

Spiral 相度

States 状态

Subsets 子域

Superphase 宫位，超相

Superposing 超引

Supremacy 优势，优先

T

Transforming 转换，变化

Transporting 运通

V

Virtumanity 虚性，慧性，物心学

Y

Yang Potential 势场

Yin Potential 气场

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宇宙统一场论

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论宇宙世界 Worlds in Universe

Chapter 1　第 1 篇

Since the fundamental concepts in this 《*Universal and Unified Field Theory*》 are emerged fully beyond a level of the contemporary physics, it becomes urgent and yet critical to understand clearly the whole picture of workings of our natural laws, basic terminologies and mathematical structures.

《宇宙统一场论》中的基本概念完全超越了当代物理学的境界层面，清晰地描述美妙宇宙的自然法则、基本术语和数学结构的整体运作全景，就成了我们极其迫切的首要环节。

The *Natural Philosophy* lies at the heart of a few of the basic laws of universal foundations, essential to those in query of the truth. In order to grasp the forthcoming sciences and to comprehend it properly, the core terminologies of nature are presented and detailed as the conceptualization to visualize our definitions of the philosophical and mathematical frameworks.

自然哲学是描述宇宙纲要的一些基本法则的核心，成为人们探索真理必不可少的工具。为了掌握和正确理解即将来临的未来科学，本文，详细地给出了用于描述自然界的核心术语和定义，从而，由纯概念到可视化过程，奠定了我们所定义的哲理性和数理性框架。

They are strikingly different from neither traditional western nor modern perspectives seeded in our physics and other sciences. Because we were born with discrepancy or prejudice of the western traditional philosophy and physics, it might have confused and disguised us to search for the truth. In fact, this is the first challenge one has to promote oneself before perceiving or prevailing further for discoveries of our nature.

严格地讲，它们与现代或传统的西方思维植入物理学和其它科学中的观点是截然不同的，由于我们与生俱来的传统西方哲学和物理学都有偏差，可能会使我们在寻找真理的过程中产生困惑和走入迷途。事实上，这是一个探索者在进一步提高意识、感知、发现和普及我们的自然本质之前，必须提升自己境界的第一个首要挑战。

In the history, we had Bohr's declaration "Everything we call real is made of things that cannot be regarded as real", Feynman's claim for the "existence of the rest of the universe", and Hawking's statement "philosophy is dead" "philosophers have not kept up with modern developments in science, particularly physics". In fact, Albert Einstein had his publications as the following:

历史上，我们有玻尔的宣告："一切我们称之为真实的东西都是由不能被视为真实的东西所构成的"，费曼的断言："宇宙其它部分的存在"，以及霍金的表白："哲学已死，哲学家们没有跟上科学，特别是现代物理学的发展"。事实上，爱因斯坦早就有了如下的陈述：

1. *"For the time being, we have to admit that we do not possess any general theoretical basis for physics, which can be regarded as its logical foundation. It is agreed on all hands that the only principle which could serve as the basis of quantum theory would be one that constituted a translation of the field theory into the scheme of quantum statistics. Whether this will actually come about in a satisfactory manner, nobody can say". - Albert Einstein, Science, 1940*

   "目前，我们不得不承认，从一开始，我们就没有物理学上任何一个可以视为逻辑基础的一般性理论。所有人都同意，可以作为量子理论基础的唯一原则是构成将场论转化为量子统计方案的原则。这实际上是否会以令人满意的方式实现，无人可言说"。- 爱因斯坦，*1940*年*"*科学*"*杂志。

2. *"The general theory of relativity is as yet incomplete … to the total field. We do not yet know with certainty, by what mathematical mechanism the total field in space is to be described and what the general invariant laws are to which this total field is subject. …" - Albert Einstein, "The theory of relativity" 1949.*

   "广义相对论对于整个领域来说还是不完整的。我们还不能确定，通过什么数学机制可以描述空间中的总场，以及这个总场是遵循什么样的普遍守恒定律 *…"* - 爱因斯坦， *1949*年 "相对论" 杂志。

3. *"… all attempts to obtain a deeper knowledge of the foundations of physics seem doomed to me unless the basic concepts are in accordance with general relativity from the beginning." - Albert Einstein, "On the generalized theory of gravitation" April 1950*

   "除非基本概念从一开始就与广义相对论一致，否则所有试图获得更深入的物理基础知识的尝试，似乎都是注定要失败的"。- 爱因斯坦，*1950*年*4*月 "论引力场的广义相对论"。

Therefore, the search for a new philosophical science to overcome physical uncertainty is book's key mission to the unresolved problems of contemporary physics.

所以，本书的关键使命，是为寻找克服和跨越物理界不确定性的新一轮哲理科学，提供解决当代物理学尚未能解释的各类问题。

1. 方法论 Methodology

Modern physics, in today's search of truth, is a positive science characterized by the scientific method as an empirical method of knowledge acquisition since at least the seventeenth century. It involves careful observation, formulating hypotheses, experimental testing of deductions drawn from and refinement of the hypotheses：

在今天的真理探索中，现代物理学是一门实验科学，其特点是约从17世纪开始就将科学方法定义为一种由主观经验获取知识的方法论，包括仔细观察和提出假设，并从假设中得出的推论进行实验证伪，通过对假设的完善而形成科学：

$$Interpretation \Leftarrow Theory\ or\ hypotheses \Leftarrow\Rightarrow Observation\ \&\ Experiment \qquad (1.1.1)$$

$$\text{解释演绎} \Leftarrow \text{理论或假设} \Leftarrow\Rightarrow \text{观察与实验} \qquad (1.1.1)$$

This methodology, establishes a solid, practical foundation of theory and technique for the exploration and explanation of physical reality, existence, knowledge, and measurements to support the continuous advance of human civilization. As a result, however, hypotheses become a primary vehicle that presupposes a philosophy.

这种方法，为探索和解释物理现实、存在、知识和测量，为人类文明的不断进步奠定了坚实的和实用的理论与技术基础。然而，其结果是，假设成为预设哲学前提的主要载体。

Similar to the apocryphal story of the elephant and the three blind men, this classical approach has relied on methods of observation and mathematics to discover the principles of nature in the regime of the "sensible" or "observable" macro- or micro-objects. At the scope of the dark energy and elementary particles towards the virtual regime, no amount of careful empirical approach or mathematical models can replace the intrinsic roles, for the modes of philosophy have always been distinct fundamentally. The vagueness of mathematized physics has been gone awry and pushed to extreme at the "collapsed" physics for a forty-year search on a *Theory of Everything* or *Unified Field Theory*, followed by another sixty-year period wasted on *String* or *Superstring Theory*, *M-Theory*, and other fairy-tale physics. It was excessive hyper among the traditional disciples that, time and again, led metaphysics to pseudoscience as if the natural sciences. Today, contemporary physics is on the same track.

类似于大象和三个盲人的虚构故事，这种经典方法依赖于经验观察和数理模型的方法，来发现“感受”、“宏观”、和“微观”物体状态下的自然法则。对于暗能量和基本粒子处于虚态域的范围内，任何细致的经验方法和数理模型都无法用“观察”替代“感知”其内在本体作用，它们与假设性哲学的模式总是有着根本的区别。数学化的物态理论具有模糊性，在物理学研究中从然被推向了极致也无法避免其偏离方向而“崩溃”，科学家们经过四十年来在寻找万物理论或统一场理论的失败后，又化费了六十年的时间在弦或超弦理论、M理论和其他童话般物理学假设上，在这种传统继承中，今天，当代物理学正走在一次又一次地把形而上学将自然科学引向人为科学，处于一种过分偏激遐想的轨道上。

While consistent with common human experience, the divine inspiration pursues a mythological formulation of the natural sciences that explores our inner world based on the ancient compendium of over five millennia of inquiry as a part of metaphysics. Because the process of the enlightenment method is relied on divine inspiration, explanatory principles are in doctrines as reasoning causes and occult essences, without testable hypotheses, empirical evidence, quantitative experiments and controlled mathematics. As a result, it became mired in superstitions and was outstripped by the newborn experimental culture of the scientific methodology.

与人类的一般经验认识论相仿，灵性感悟是追求自然科学的另一种神秘模式，她的纲要来自于五千多年前，我们祖先由内在世界对形而上学的探索；由于启蒙方式和过程是以先天启示为基础，解释原则在理论上是作为推理因果和神秘本质，没有可直接检验的假设、经验证据、定量实验和数学受控。结果，她陷入了迷信的泥潭，被后来的实验科学方法论及其思想文化所超越。

There are clearly differences between modern physics and classical metaphysics. Although it seems obvious at the use of mathematics, the constitutive cause might actually be hidden at or implies to the way of knowledge acquisition: research thoughts by brain or mind inspirations by heart, or both. The methodology of searching for truth must dawn on natural philosophy driving and refining scientific theories to empirical verifications.

现代物理学与古典形而上学有着明显的区别，尽管在使用数学原理上有着显而易见的不同，但实际上，它们在构建因果时摄取知识的方式上，蕴含或暗示着：以“脑”探知 或以“心”感知，或两者兼而有之，形成相关性，赋予因果性，得以自然性。寻求真理的方法论必须以自然哲学为出发点，以此驱动和提炼科学理论，获取实践验证。

$$\textit{Natural Philosophy} \Rightarrow \textit{Scientific Theory} \Leftarrow \Rightarrow \textit{Observation and Experiment} \qquad (1.1.2)$$

$$\text{自然哲学} \Rightarrow \text{科学理论} \Leftarrow \Rightarrow \text{观察与实验} \qquad (1.1.2)$$

In other worlds, it is vital that one should not construe the principles of natural philosophy from scientific theories based only on the empirical observation and experiment. Therefore, we outline the fundamental terminologies of our universe philosophically as the preliminary laws of our nature. Throughout the manuscripts, we abstract each context of the laws philosophically, define their terminologies revelationally, derive the scientific theories mathematically, and testify the “artifacts” empirically through a realization of 《Universal and Unified Field Theory》.

换言之，认知论要点是人们不应该只基于经验观察和实验所产生的理论来推测自然哲学的原理。由此，从我们哲学上阐明宇宙基本术语，作为我们掌握自然的本性规律；在整个本文手稿中，我们从哲学上抽象自然法则，从理论上定义法则术语，从数学上推导科学理论，从经验事实上作证：《宇宙统一场》的实现。

2. 基本术语 Basic Terminology

The universe has natural objects and structural morphisms, representing events and operational processes among situations. In physics, the nature objects are often virtual and physical matters, and the morphisms are dualities of the dialectical processes orchestrating a set or subsets of events, operations, and states in one regime rising, transforming, transporting, and alternating into states of the others: universal topology of the nature structure. Some of the fundamental terminology can be outlined as the preliminary laws of universal topology as, but not limited to, the following:

宇宙是由自然对象和态射结构的连续函数，来表述情境中的事件和操作过程。在物理学中，自然对象通常是虚拟的和物理的事态，而态射是用二象性辩证过程的操作，从一个领域的集合或子集提升、变换、运输和交替进入其它状态的一组本体或附属事件的状态，即，自然结构的宇宙拓扑；作为宇宙拓扑中主要定律的基本内容和法则，这些概念可以起源于（但不限于）以下一些基本术语：

1. *Universe - The whole of everything in existence that operates under a topological system of natural laws for, but not limited to, physical and virtual events, states, matters, and actions. It constitutes and orchestrates various domains, called World, each of which is composed of hierarchical manifests for the events, operations, and transformations among the neighborhood zones or its subsets of areas, called horizon. An event or operation is naturally initiated by and interoperated among each of horizons, worlds, and universe. Together, they form the comprehensive situations of the horizon, life steams of the world, and environments of the universe. As one of the universe domains, for example, our world is consisted by the laws of the yinyang principles which represent the complementary opponents operating as the resource of the motion dynamics for all natural states and events.*

宇宙 - 在自然法则的拓扑系统下，她包括了存在的所有一切，如，物态和虚态的事件、状态、事态和行为等；它构成并协调称之为“世界”的各个领域，每个域与邻近区域或其子区域间，由各自明确的构架、事件、操作和变换，这种分层区域称之为“层界”；任何事件或操作都是在层界、世界和宇宙的交互作用中各自激发和相互运作；它们共同形成了层界的综合情境、世界的生命源泉和宇宙的状态环境。例如，作为宇宙领域之一，我们的世界是由阴阳原理的法则所组成，表现为一对共轭相辅相成的对耦体，她们是操作所有自然状态事件的运动资源。

2. *World - An environment composed of instances or constituted by hierarchical structures of both massless and massive objects, events, states, matters, and situations. These hierarchical structures of the global manifold are respectively defined as Virtual World, a zone where operates virtual event, or Physical World, a zone where performs physical actions. Together, the virtual and physical worlds form one integrated World as a domain of the universe and interoperates as the complementary opponents of all natural states and events. Traditionally, for example, the virtual world is referred to as the inner world, the physical world as the outer world, and together they form holistic lives in universe. A world has a permanent form of global topology, localizes a region of universe, and interacts with other worlds rising from one or the others with common ground in universal conservations. Furthermore, there are multiple levels of inner worlds and outer worlds. Inner worlds are instances of situations, with or without energy or mass formations, while outer worlds include physical mass of living beings and inanimate objects. Both are real, as well as topologically interactive with and external to each other.*

世界 - 由事例、无质量或有质量的模块、事件，状态，事态和情境的各等级结构所组成的环境系统。全局流形的这些分层结构分别被定义为虚态世界，操作虚拟事件的区域，或物态世界，执行物理行为的区域。虚态世界和物态世界共同形成了一个整合的世界作为宇宙领域，并对所有自然状态

和事件进行共轭交互操作。在传统上，例如，虚态世界被称为内心世界，物态世界被称为外部世界，它们一起形成宇宙中的生命整体。世界具有一个永久形式的全球拓扑，将宇宙区域本地化，她们具有相同普遍守恒的共同基点，并与其它世界在互相作用中升级成形。此外，内部世界和外部世界有多个层次，内在世界是具有或不具有能量或质量形式的情境，而外部世界含有生态物理质量和无生命模块。两者都是真实地存在的，即拓扑互动，又辅为外动。

3. *Duality - The complementary opponents of inseparable, reciprocal pairs of all natural states, energy, and events, constituted by the topological hierarchy of our world. Among them, the most fundamental duality is our domain resources of the universe, known as yin (阴 in Chinese) "-" or Y^- and yang (阳 in Chinese) "+" or Y^+, with neutral balance "o" （that appears as if there were nothing or dark energy）. Yinyang (Y^-Y^+) presents the two-sidedness of any event, operations, or spaces, each dissolving into the other in an alternating stream that generates the life of situations, conceals the inanimacy of resources, operates the movement of actions through continuous helix-circulations, symmetrically and asymmetrically. Because of this yinyang nature, our world always manifests a mirrored pair in the imaginary part, a* ***conjugate*** *pair of a complex manifold, defined as Yinyang (Y^-Y^+) Manifolds.*

   二象性 - 所有的自然状态、能量和事件，都由我们所处世界的拓扑层次而构成不可分割和相辅相成的互补共轭对偶面。其中，我们宇宙域中最基本的资源是二象性，称为，阴"—"（用Y^-表述）、阳"+"（用Y^+表述）、中性平衡"o"（表现为似乎没有任何的宫位空间，或称为暗能量）。阴阳 (Y^-Y^+) 表述了呈现于任何事件、操作或宫位空间的两面性，各自以一种交替互融的方式溶于对方，这种互辅交融流动促成了生态情境的产生，化合生命资源的隐归，操作运动的行进，从而，达到螺旋连续循环的对称性和协

称性。由于这种自然阴阳特性，我们的世界自始至终呈现着一个镜像虚数对：一组复流形的共轭对，称之为阴阳 *(Y^-Y^+)* 流形。

4. *Manifold - A common environment of the world determined by projections (known as dimensions) from objects of virtual or physical spaces. Manifold manifests as various states of both virtual and physical spaces called global domains of the universe manifolds, which emerge as object events, operate in zone transformations, and transit between state energies and mass enclaves. The universe topology consists of two manifolds: yin manifold with the events of physical supremacy and yang manifold with the events of virtual supremacy. In the yin manifold of physical primary, called Spacetime or Y^- Manifold, they continuously and progressively rise through various stages of yang manifold, called Timespace or Y^+ Manifold. Together, each advances from the others under a topological hierarchy of the manifolds to develop a consistent system of stages, which is divided into various scopes, called Horizon. For example, they form the ground foundation for the physical reality known as dark energy and elementary particles with virtual signatures of spin, charge and mass.*

   流形 - 用于确定虚实域中目标块投影 *(*称之为维度*)* 所给出的一个共享环境。流形表现的是虚域或实域在各类宫位空间的状态，并由此合成为宇宙流形的全局域，它们以对象或模块的事件形式出现，在域间相互变换中运行，形成能量状态和物质飞地之间的传递和转换。宇宙拓扑由两个流形组成：具有物态事件为主导的阴流形和具有虚态事件为主导的阳流形。阴Y^-流形描写的是物态主导的空时流形，它们通过阳Y^+流形的各个层次阶段，持续稳定地成形为物质体，阳Y^+流形描述的状态由时空流形表述。在拓扑流形结构中，它们互辅交织共同发展成一个多状态自洽体系，并且可以进一步划分成包含各个不同状态组和范畴，称为层界 (Horizon)；例如，它们所形成的实态物形的底层基础，被称之为暗能量和基本粒子，具有自旋、电荷和质量的虚态特征标志。

5. *Horizon - The apparent boundary of a realm of perception or the like, where unique structures are evolved, topological functions are performed, various neighborhoods form complementary interactions, and zones of the world are composed through multi-functional transformations. Each horizon rises and contains specific fields as a construction of the symmetric and asymmetric dynamics within or beyond its own range. In other words, fields vary from one horizon to the others, each of which is part of and aligned with the universal topology of the world. In physics, for example, the microscopic and macroscopic zones are in the separate horizons, each of which emerges its own fields and aggregates or dissolves between each others.*

   层界 - 类似于域的显然边界，在那里，为独特结构的进化、拓扑功能的执行和邻域互补的作用，提供了多功能相互转换而组成世界域。每一层界形成和提供特有的场，作为在其自身范围之内的对称或之外的协称所需构造的动力。换言之，场从一个层界到另一个层界是各不相同的，各个层界都从属于宇宙拓扑下的一个世界部分，并与之保持一致。例如，在物理学中，微观和宏观区域是处于不同的层界中，每个层界都呈现有自己的场，彼邻之间形成集聚或化合作用。

6. *Photon and Graviton - A pair of reciprocal objects emanated in virtual word, conserved by yinyang phases, and confined by a timespace manifold of virtual world. In spacetime manifold of physical world, the speed of light or gravitation is only variable with superphase times as a function of virtual position, not physical space, for all observers, regardless of the physical motion of the light or gravitation sources. The constant, c or c_g, denoting the speed of superphase transportation, is the speed amplitude and forms a dimension reflected from virtual world, with the property of being confined by yinyang phases in timespace and of appearing as a universal invariant constant in and only in physical space.*

   光子和引子 - 一对相互制约的互易目标模块体，通过阴阳宫位守恒，显现于虚拟世界中，并受虚拟世界的时空流形限制。在物态世界的空时流形

中，无论光源或引源的运动状态如何，对于所有的观测者来说，光子或引子的速度只随宫位时间而变，且不受物质空间的影响。它们的幅值为常数 c 或 c_g 表示运输的速度，它是从虚拟世界中反射出来的一个维度，在时空上受阴阳宫位的调制，在物理空间中，只表现为宇宙的一个不变常数。

In general, physics studies duality of yinyang resource, potential fields, entangle fluxion, commutation infrastructure, event operations, symmetric continuity, conservation laws, asymmetric dynamics, state-energy movements, and manifold transformations within a scope of mass-massless dynamics under the fundamental topology of physical-virtual environment.

一般来说，在虚实环境的基本拓扑中，物理学研究的是有质量或无质量的运动属性，包括阴阳资源的二象性，势气场，纠缠流，对易架构，事件操作，对称连续，守恒定律，协称动态，能态运动，流形变易，等等。

Considering the physical formation from particle to cell to organism to life, it is natural to add to the terminology developed to describe the organization of universe up to the level of the particle. Thus, we present three principles of topological frameworks: Operation, Transformation and Revelation.

考虑到从粒子到细胞到有机体再到生命的物理过程，这就可以自然地将我们的术语从宇宙组体扩展到描述粒子层面。因此，我们就有了拓扑框架的三个原理：操作、变换和显现。

3. 事态和状态 Matter and States

Matter is defined normally as the set of states, which consists or is composed of any element, object, substance, subject, or situation. Its existence is operated by the event actions that can appear as virtual, or physical, or both. States are mutational and transformable variables of the appearances or characteristics in either virtual or physical, or both. In other words, matter is an existence in the form of states or events in general, virtually and/or physically. The universe is a supernatural environment structured for the totality of existence in the form of states as the formational variables of matter. By grouping the states into virtual or physical, or both, we define the virtual and physical worlds as simultaneous or coexistent. In fact, states of a matter are overlaid with transformations across and transportations transverse multiple worlds.

事态，通常被定义为一组状态，由任何一类元素、对象、事体、主体或情景组成；它的存在是由事件行为可操作的，这些行为可以是虚拟的，也可以是物理的，或者两者兼而有之。状态，可以是虚态的，也可以是物态的，或两者兼而有之，具有外观特征的可变异性和可转换性的变量。换言之，事态，通常是以虚态和/或物态的状态或事件的形式而存在的一种形态。宇宙是由一个超自然的环境构造的整体存在性，以事态的状态形式为形态变量。通过将状态分为虚态世界和物态世界，或者两者兼而有之，我们就定义了虚态世界和物态世界具有同时性或共存性。事实上，一个事态的状态覆盖着跨越多重世界间的转换和运通。

Aristotle famously contends that every physical object is a compound of matter and form. This doctrine has been dubbed “hylomorphism”, a portmanteau of the Greek words for matter (hulê) and form (eidos or morphê). In the Physics, to account for changes in the natural world, he maintains, there is no generation ex nihilo that is “nothing comes from nothing”. In this connection, he develops a general hylomorphic framework and extends to work in a variety of contexts. For example, in his *Metaphysics*, form is what unifies some matter into a single object, the compound of the two in his *De Anima*, by treating soul and body as a special case of form and matter and by analyzing perception as the reception of form without matter.

亚里士多德有一个著名的论断：每个物体都是事态和形态的混合体。这个学说被称为“hylomorphism” (亚纯性)，是希腊语中事态 (hulè) 和形态 (eidos或morphè) 的组合词。在物理学中，为了解释自然世界的变化，他坚持认为，前一代中没有一代人是“从无到有”。在这方面，他发展了一个一般的亚纯框架，并扩展到各种各样的情景。例如，在他的形而上学中，形式是把一些事态统一成一个单一的物体，在他的《阿尼玛》中是二者的复合物，把灵魂和身体看作是形式和事态的一个特例，把知觉分析为接受没有事态的形式。

As a part of the supernatural principles in an environment of virtual space, Chinese tradition has developed the profound ontology and established scientifically the natural laws of *Xing* (性) or *YinYang* (阴阳) duality: the reciprocal interaction of the opposite *Matter* and *States* is to cause all universal phenomena. The yin and yang, or simply - and +, are the states of or the operations on an element or an object, which form a coherent fabric of our nature, as exhibited in all physical existence. This display of duality forms the sense of natural harmony where the opposite is complimented to give dynamism and sense to life. The ever-changing relationship dynamically between reciprocal *matter* and *states* is responsible to operate and conserve the fluxion of the universe and life in general. Although *YinYang* has its root in Chinese philosophy, this conception has its testimony in multiple cultures in Hindu, Egyptian, Hebrew, Germany and other traditions.

作为虚态宫位环境中超自然法则的一部分，中国传统深刻地发展了本体学，科学地确立了阴阳（或性）二象性的自然规律：互为对立事态与状态的相互作用是导致和发生一切宇宙现象的根源。阴与阳，或简单的表述为-和+，是一个元素或模块的状态或操作，她们形成了我们本体性的一个连贯结构，显现于所有物质的存在形式。这种二象性的表现形成了一种自然的和谐体系，在这种系统中，对立面的赞辅赋予了生命的活力和

意义。相互作用的事态和状态之间不断变化的动态关系，担负着运行宇宙守恒和流通，赋予了生命的普遍性。尽管阴阳源于中国哲学，但在印度教、埃及、希伯来语、德国等多种传统文化中，阴阳这一概念都有其立证处。

Consequently, terminologies of matter and states reveal the nature laws correlatively among physical and ontological disciplines of our mankind, which are continuously playing a vital role in our further development for the triple-unification of philosophy, science and empiricism.

总而言之，事态和状态的术语揭示了人类物理学和本体学之间相互关联的自然规律，对我们进一步发展哲学、科学和经验科学的三位一体起着至关重要的作用。

4. 运作框架 Operational Framework

Operation is a process, method, or series of acts driven by a set of functions of the virtual or physical events, called yang or yin operations, respectively. Both yield the following laws:

操作是由一组虚拟或物理事件和功能驱动的过程、方法或一系列行为，分别有称为阳操作或阴操作，两者都产生以下规律：

1. *Operation - The events through both yin and yang dynamic functions are operable in a neighborhood or subsets of every point in the world of its universe manifold, and homeomorphic among objects, events, states, matters, and situations under the yinyang manifolds of the universe.*

   操作性 - 通过阴阳动态功能的事件，在其宇宙的世界流形中，每一点的邻域或子集上都是可操作的，并且在宇宙阴阳流形下的模块、事件、状态、事态和情景之间具有同胚性。

2. *Relativity - Observed within its own zone, its internal events operate their state functions parallel to the universal manifold as a special relativistic and symmetric system. When projected into its opponent zone, the "local" events become external and transformable to the global domain as a general relativistic and asymmetric system.*

   相对性 - 在本区域内观察内部事件在操作状态函数时，可视作为平行于宇宙流形运行而形成的一个特殊的相对性和对称系统。当"局域"事件被投射到它的对偶域时，它就变成了外部事件，并且转换到全局域后，显现为具有广义相对性和协称性的系统。

3. *Entropy - A measure of the specific operations of ways represents such an environment in which states of a universal system could be arranged and balanced towards its equilibrium. As an operational duality, the entropy tends towards both extrema alternately to maintain a continuity*

of energy conservations, operated by each of the opponents. When a total entropy decreases that the intrinsic order, or Yin development, of virtual into physical regime is more dominant than the reverse process. Conversely, when a total entropy increases, the extrinsic disorder, or Yang annihilations, becomes dominant and conceals physical resources into virtual regime.

熵态性 - 综合各类操作方式的一种量度，描述的是宇宙系统的各个状态可以按照其布局和排列来进行平衡。作为一种二象性操作，熵交替趋向于两个极值，以保持能量守恒的连续性。当总熵降低时，内在秩序趋于阴发展地位，虚态进入物态的过程比其对耦的逆过程更为主导。相反，当总熵增加时，外在无序或阳湮灭变得占主导地位，并将物态资源化归到虚拟状态中。

4. *Supremacy - During the physical observations, “internal” or “physical” operations result in its local effects parallel to the global domain with the events of physical supremacy, functions of the special transportation, and states of symmetric property. Similarly, “external” or “virtual” operations result in the projection or transform from its local effects to the neighbor domain with the events of virtual supremacy, functions of general commutations, and states of asymmetric property. Vice versa, for physical ↔ virtual interexchange.*

   主导性 - 在对物态的观测中，“内部”或“物理”操作导致其局部效应与全局域平行，体现的是物态优势的事件、特设传输的功能和对称特性的状态，同样，“外部”或“虚拟”操作导致从其局域效应到邻域进行投影或变换，体现的是虚态优势的事件、常规对易的功能和协称特性的状态。反之亦然，适用于物理 ↔ 虚拟的双向置换。

For the conceptual simplicity, this manuscripts limits further only to the physical observations. Therefore, we simply refer the states, events, and operations of “physical” functions to the yin supremacy, implying the *Spacetime* manifold parallel to its global domain with the spatial relativistic dynamics, symmetry characteristics, and of “virtual” functions to the yang supremacy, implying the *Timespace* manifold transformational to its reciprocal domain for physical observations with the general commutative dynamics and asymmetry characteristics, respectively. A world plane of the universe manifold is a global duality of virtual and physical worlds or yin and yang manifolds.

鉴于概念上的简化，本手稿仅限于物理观测，因此，当我们简单地把它作为以阴为“物理”优势功能至上的状态、事件和操作时，就意味着与其全局域平行的空时流形具有狭义相对运动和对称特征；然而，当我们简单地把它作为以阳为“虚拟”优势功能至上的状态、事件和操作时，就意味着时空流形转换为它的物态互易域时，具有通常的对易动态和协称特性的物理可观测量。宇宙流形的世界平面是由虚拟世界和物理世界构成的，即，阴阳流形的全域二象性。

5. 层界流程 Horizon Processes

Horizons are evolved with a type of the bi-directional process of evolution and stagnation in physical world, which emanates from or conceals in resources of the virtual worlds. For example, an elementary particle is composed of objects that exist in various forms beyond physical world. Those objects exist in environments of virtual worlds, which may not be directly detectable by measurements in our physical world because of the limitation of uncertainty. However, it is indirectly sensible and appears throughout all physical existence. On occasion, it may even be explicitly formulated, such as the philosophy of yinyang, which was discovered seven thousand years ago.

层界演化起源于或化归于虚态世界的资源中，是一种物态世界的双向演化和驻滞过程。例如，基本粒子是由各种存在形式所组成并超越于物理世界的目标块，这些模块存源于虚拟世界的环境中，在我们的物理世界中的测量，由于不确定性的限制，可能无法直接检测到这些模块。然而，它是可以间接地感性，并且出现在所有的物质存在形式中，有时，甚至可以有公式明确表述，如，早在七千年前就发现了阴阳哲学。

Originated by supernatural and composited by the virtual elements with yinyang appearance, horizon structures are traveling across multi-zones of the world that can conduct and perform activities as a part of their behaviors at the outer world. This is a bi-directional transforming seamlessly and alternately between the virtual and physical worlds. In a sense of physics, the transformation between virtual and physical spaces involves the environments of three horizon processes：

层界结构起源于超自然阴阳二象性，由虚态元素组合成的，它穿越多个世界区域，作为它们表现外部世界行为来进行和执行活动的一个部分，也是一种虚态世界和物态世界之间无缝交替的双向转换。在物理学意义上，虚态宫间和物态空间之间的转换涉及到三个层界的流程：

1. *Yinyang nature as a part of fully-virtual world under virtual yang-supremacy, named Xingscope or Timespace manifold;*
   自然阴阳性，作为全虚态世界的一个部分，以虚阳形态为优势，命名为，性宫间，或空时流形；
2. *Energy enclave as a part of virtual and physical worlds, named Statescope or Timestate manifold or Heteromorphism;*
   能量飞地，作为部分虚态和部分物态的世界域，命名为状态域，或时间状态流形，或异态域；
3. *Mass embody as a part of fully-physical world under physical yin-supremacy, named Spacescope, or Spacetime manifold.*
   质量廓体，为全物理的一个世界部分，以物理阴态为优势，称为空间范围，或 时空流形。

When virtual objects form the existence as a matter, ontology of a universe is in coherent harmonization of supernatural evolutions emerging yinyang dualities of virtual reality. Yinyang duality is the resources of an indivisible whole and exhibited in all physical matters. For physicists, examples of these fundamental instances are a duality of symmetry-antisymmetry, state-energy, time-space, mass-massless, wave-particle, and much more. For metaphysicists, obvious examples are a duality of male-female, body-mind, thought-action, consciousness-brain, and more beyond. They are complementary interdependent, and can manifest balance or supremacy in one against the other to perform particular actions or movements of objects or event processes based on criterions of the situation.

当虚态物体作为物质形式存在时，本体学协调着超自然进化中呈现阴阳二象性的虚态现实。阴阳二象性是一个不可分割的整体资源，表现在所有物质事态中。对于物理学家来说，这些基本事实的例子有：对称与反对称、状态与能量、时间与空间、质量与无质量、波形与粒形等的对偶性。对于形而上学者来说，显而易见的例子是男和女、身和心、思和行、意识和大脑等的二象性。它们是相辅相成和相互依存，平衡于某一方对另一方产生的对偶优势，根据形态准则来执行特定行动、模块运行或事件过程，等等。

6. 启示级 Hierarchical Revelation

Hierarchical revelation is a type of evolution and stagnation processes within a world in divinity, ascending from or descending into each of the layers or horizons, relatively and respectively.

启示级是一种在一个世界范畴进化和驻滞过程的神示级，相对地和分别地从一个层界上升或下降到另一层界。

In physical world, there exists numerous levels of reality in a variety of variations so that one level forms the others that are aligned with its topological hierarchy. Each level of physical reality constitutes a horizon, which contains or yields the following actions:

在物理世界中，存在着不同层次的许多现实变化形式，因此一个层次按照拓扑层次结构组成另一个层次。每一层物质现实构成一个层界，它包含或产生以下行为：

1. Forms a domain of its principles commonly shared by their common behaviors and interruptive activities;

   形成自我运行原则的一个领域，分享它们的共同行为和互动活动；

2. Evolves into its higher level of horizons to advance revelations as a natural growth process;

   进化到更高层次的层界，成为一个自然过程来推进启示级成长；

3. Diminishes to its original level of inception horizons to recycle resources as an inanimate concealment.

   化归到原始开源的层界，成为一个自息过程来隐归无生命资源。

Therefore, within each of horizons, there exists a unique interactions of operations, formations, potentials，fields, generators, commutators，functions, information, and messengers, relatively, symmetrically, and asymmetrically.

因此，在每一个层界中，存在着各类操作、形态、势气、场、激发子、对易子、功能、信息、信使，等独特而又相对地、对称地和协称地配合运作。

7. 不变性原理 Invariant Principle

Invariance between the manifolds is mathematically presented as relativity in the field relationships of general scalars, vectors, and tensors. It is important to understand that, although experiences of nature can be altered by the observer's situation, all natural laws governing behaviors in physical or virtual world present universal laws in the same way, or without regard to the observer's reference frame. Laws of physics are invariant in virtumanity. It is even more essential to understand that, because physical motions of observers' reference frames are universe events, their relativity is indivisible from virtual world. Together, they form universe manifolds. In other words, no relative movement can happen without a cause from actions or universe events. A process limited to a "closed" manifold that maintains relativity without dynamic effects of its opponent manifold can lead to violations of fundamental principles of philosophy: topology of the universe.

流形之间的不变性，在数学上表示为广义标量、向量和张量场关系中的相对性。然而，更重要的是，虽然自然的经验可以被观察者的处境所改变，但所有支配物态或虚态世界中行为的自然法则，都呈现着同样方式的普遍法则，与虑观察者的参照系无关。物理定律在虚性方面是不变的。更重要的是要理解，由于观察者参考系的物理运动是宇宙事件，它们的相对性与虚态世界是不可分割的，它们一起形成宇宙流形。换句话说，没有运行或宇宙事件的动因，任何相对运动都不可能发生。一个被限制在一个“封闭”流形中的过程，在不受其对耦流形的动态影响的情况下保持相对性，会导致违反哲学的基本原理：宇宙的拓扑结构。

Our discussion initiates at the timespace or heteromorphism manifold where creates matters at the timestate hardly detectable and transforms into occurrences at the local inertial frames determined by the distribution and motion of mass in the universe. Virtual time incepts at energy enclaves in timestate of the universe manifold, while real space starts with mass embodied in spacetime manifold.

我们的探索从时间状态的异态流形开始，在这个流形中产生出许多难以测量的频发事件，并转化为宇宙中由质量分布和运动所决定的局域惯性系事件。在宇宙流形的时间异态中，虚拟时间是在能量飞地上开源，而真实空间是起源于质量的时空流形。

This is coincident with Mach’s principle that the ‘fixed stars’ are at rest on heaven as observed from an inertial reference frame, commonly called the “instantaneous rest frame” (IRF). This principle is extended yinyang topology throughout our entire article, which removes the unnecessary complexity due to relativity effects in transformations.

这与马赫原理巧合一致，即，从惯性参考系观察到的“固定恒星”在天上是静止的，通常称这个惯性参考系为“瞬时静止系”（IRF）。这条原则经过阴阳拓扑的发展后，贯穿于我们整篇文章，它消除了由于转换中的相对性效应而带来的不必要的复杂性。

The event operations among spacetime or timespace manifolds can always be converted to or simplified by the following invariant principle:

时空流形或状态流形之间的事件操作，总是可以通过以下不变原理进行转换或简化：

A. *For manifolds of either spacetime or timespace, the tetrad coordinates of each $\overrightarrow{\mathbf{q}}(x_\mu)$ or $\overleftarrow{\mathbf{q}}(x^\nu)$ are similar to Cartesian coordinates, introduced by* ***René Descartes*** *in 1637, for a point vector in a 4-dimensional Euclidean space, introduced by* ***Euclid of Alexandria*** *300 BCE [4].*

   对于时空流形，每个阴 $\overrightarrow{\mathbf{q}}(x_\mu)$ 或阳 $\overleftarrow{\mathbf{q}}(x^\nu)$ 矢量的四维坐标与笛卡尔在*1637*年引入的坐标相似，对于四维欧几里德空间中的点向量，由亚历山大*300*年的欧几里德引入。

B. *Within a homogeneous manifold, it represents Lorentz Transformations with the principle of physical symmetry, introduced by* ***Hendrik Lorentz*** *in 1899.*

在各向同性流形中，它用物理对称原理表示洛伦兹变换，由亨德里克·洛伦兹于*1899*年引入。

C. *Between world planes and spacetime manifolds, it represents YinYang entanglements of potential fields as the virtually inseparable and physically reciprocal pairs of all natural functions symmetrically and asymmetrically, introduced here since 2016.*

在世界平面和时空流形之间，它都将势气场的阴阳纠缠，表示成所有对称和协称的自然性功能，为不可分割的虚态和对偶互惠的实态形成共轭体，于*2016*年在这里引入。

Since laws of physics are the same for all observers, the relative behavior measured by an observer is presented as the duality of the manifolds in the remainder of this manuscript. It follows the common situation as the simplicity that an observer is set at the spacetime manifold under the universe environment of our physical world.

由于物理定律对所有观测者都是一样的，在本手稿中，观测者测量的相对行为被呈现为流形的对偶性。它遵循一种简化常态，在我们物理世界的宇宙环境下，观察者被设置在时空流形中。

Based on the ontological principle of virtual matter, virtual time associated with energy first occurs globally, then in physical space, and finally in the inception of mass. Laws of physics are conserved and irrelevant to observational transformations, invariant in all reference systems with either inertial or accelerating frames of observation. Transformation between reference frames do not change the laws of physics, although it does alter its description relative to an observer. If the observer is not within the set of observed objects, relativity must be considered as an external effect in addition to an “isolated” system. This means that the “closed” objects are “open” to relativity for observers. In particular, the reference frame must consider itself as the dynamic cause of its own relative movement.

基于虚态事态的本体学原理，与能量相关的虚拟时间首先发生在全局范围，然后发生在物理空间，最后发生在质量的开源处。物理定律是守恒的，与观测变换无关，在所有具有惯性或加速观测框架的参考系中都是不变的。参考系之间的转换不会改变物理定

律，尽管它确实会改变相对于观察者的描述。如果观察者不在被观察对象的集合内，相对论必须被视为一个“孤立”系统之外的外部效应，这意味着“封闭”模块对观测者的相对性是“开放”的，特别是，参照系必须将自身视为其自身相对运动的动态源。

8. 状态塌缩 Collapsed States

The classical theories, based on the observation at many observable collapsed states, have resulted in their theoretical models toward the decoherence interpretations or physical existence only. After an observation is made, each element of the superposition becomes the combined subject–object and any object with the two "relative states" is "collapsed" at its state with the same collapsed outcome. As a single manifold, reality has always been viewed or isolated as an unfolding history. Schrödinger's cat, for example, is one of the well-known paradox as a thought experiment of the classic concepts.

经典理论是基于对许多可观察塌缩态的测量而建立起来的，它们的理论模型只适用于退相干解释的物理存在态。在观察之后，叠加的每个元素都组合成为实态客体，任何具有两个“相对状态”的对象都会在其状态下“折叠”，缩态成相同结果。作为一个单流形，现实一直被视为或孤立为一个历史态的展开，例如，薛定谔的“猫”就是著名的悖论之一，它是用经典概念实施的一种思想性实验。

To extend our fundamental physics into a duality of a oneness nature, *Universal Topology* views historical and real-life reality as a many-branched tree, wherein every possible quantum outcome is realized or rising from horizons. Naturally, many-worlds, multiverse, and dark energy has become the main mainstream of philosophical interpretations. Although these models describes indirectly to the observable states, they are developed as the most accepted hypothesis today. These theories or interpretations imply the common ideas that, at minimum, there exists a pair of the fields: one for our physical world and the other for its reciprocal other world or virtual world.

为了将我们的基本物理学扩展到一个自然统一的二象性中，宇宙拓扑学把历史和现实生活视为一棵多分支的树，其中可能的量子结果都是在各层界上实行和展开。自然地，多重世界，多元宇宙和暗能量已经成为哲学解释的主流。尽管这些模型间接地描述

了可观测状态，但它们只是被发展成为当今最被接受的假设而已。这些理论或解释暗示了一个共同的观点，即至少存在两个领域：一个是我们的物理世界，另一个是与它相互作用的另一个虚拟世界。

More precisely in principle, an object possesses a pair of the potential fields and requires a duality of manifolds for their life entanglement. Because each object possesses a pair of the virtual and physical fields, an interruption between two objects involves two pairs of the fields, which constitute cross-entangling simultaneously and reciprocally [7,8,11]. In mathematics, this means that, instead of a single manifold, a oneness of the real world of our universe must be modeled by a duality of the *World Planes*, or the *Dual Manifolds* of *Universal Topology*.

更准确地说，在原理上任何模块都拥有一对势气场，并且需要一对流形的对偶性来实现它们的生态纠缠。由于，每个物体都有一对虚态场（势场优先）和物态场（气场优先），所以两个目标模块之间的相互作用就隐含着两对场，这两对场同时并互辅地构成交叉纠缠。在数学上，这意味着，我们宇宙真实世界的统一性必须由世界平面的二象性或宇宙拓扑的双流形来建模，而不能用任何单一流形。

Therefore, it provides the context for our main philosophical interpretation to extend our fundamental physics into a duality of a oneness of natural world. As a conceptual simplicity, our entire theory of the nature is based on the principle: *Dual Manifolds*, instead of one single manifold. In fact, the two metric signatures (+ – – –) or (– + + +) of *Minkowski* spacetime have been discovered since 1908.

因此，它为我们哲学的主要解释提供了背景，将我们的基本物理学扩展到二象性为一体的自然世界。作为一个概念上的简明性，我们自然地将整个理论基于这样一个原理：对偶流形，而不是单一流形。事实上，自从1908年以来，人们就已经发现了闵可夫斯基时空的两个度规特征 (+---) 或 (+-++) 。

In our universe, a duality of the two-sidedness lies at the heart of all events or instances as they are interrelate, opposite or contrary to one another, each dissolving into the other in alternating streams that operates a life of creation, generation, commutation or actions complementarily, reciprocally and interdependently. The nature consistently emerges as or dynamically entangles with a set of the potential fields that communicates and projects their interoperable values to its surrounding environment, alternatively arisen by or acting on its opponent through the reciprocal interactions.

在我们的宇宙中，二象性的两面性是存在于所有事件或实例的核心，因为它们相互关联、对立或相反，每一个都以交互的方式溶于另一个，以互补、交互和相互依赖的方式运作着一个创生、盛生、对易或运行的生态。自然界始终呈现或动态纠缠为一组势气场，将可以互辅操作的值，传递到其周围环境，通过交互互易的行为产生或相互作用于它的对偶体。

9. 传播场 Field Propagation

Field propagation is a natural essence of virtual potential interruptions accompanied by a transfer of virtual energy that appears as oscillational waves, either travels through a physical medium or entangles cross an empty space. In the physical regime, it always associates with frequency of the vector wave, referring to the addition of time. In the virtual regime, field propagation is superposing and transfers energy virtually from one point to another, which displace physical particles of the transmission medium – that is, with little or no associated mass transportation. Remarkably, field propagations consist of or source from oscillations or vibrations of a physical quantity, around almost fixed locations at the third or higher horizons, while the propagation is a disturbance entanglement that transfers energy virtually through the first and second horizons.

传播场是虚拟势气交互的自然本质，伴随着以振荡波形式出现的虚态能量的转换，它可以穿过物理介质，也可以穿越真空区。在物理状态下，它总是与矢量波的频率有关，用以时间效应的叠加。在虚态域中，传播场是超引叠加，并将能量从一个点传递到另一个点，从而置换传输介质的物态粒子，也就是说，几乎没有或根本没有相关的质量传输。值得注意的是，场传播包含或来源于物理量的振荡或振动，在第三或更高的层界中位置几乎是固定的，而传播是一种扰动纠缠，它实际上是通过第一和第二层界实现虚态能量的传递。

Described by a field equation, field propagation sets out how the entanglement proceeds over time in the physical regime. By means of commutation and/or continuity, field equation is a partial differential equation which determines the flux dynamics of a pair of the physical and virtual potentials, specifically the time evolution and spatial distribution of the fields. The solutions to the equation are mathematical functions which correspond directly to the field, as a functions of time and space. Since the field equation is a partial differential equation, there are families of solutions which represent a variety of physical possibilities as well as superphase modulations. Usually, there is not just a single equation, but a set of coupled equations which must be solved simultaneously. Field equations are not ordinary differential equations since a pair of the interruptive potentials depends on both of space and time, and crosses over multiple horizons in form of either vector or scalar field or both.

用场方程描述传播场，阐明的是，在物理状态下，纠缠是如何随时间进程的演化效应。通过对易和连续性机制，场方程是一个偏微分方程，它决定一对虚态势和实态气的动态通量，特别是场的时间演化和空间分布，方程的解是直接对应于场的时间和空间的数学函数。由于场方程是一个偏微分方程，因此存在一系列的解，它们代表了各类物理的可能性以及宫位调制性。通常，它们不只是一个方程，而是一组必须同时求解的耦合方程。场方程不是普通的微分方程，因为一对交互势气既依赖于空间又依赖于时间，并且以矢量场或标量场的形式跨越多个层界。

The mathematical form of these equations varies depending on the type of fields. There are three main types of the behaviors of virtual or physical mechanisms, describable by waves as the following:

这些方程的数学形式因场的类型而异。虚态或实态机制的行为主要有三种类型的波，描述如下

1. *Mechanical Waves propagate through a medium, and the substance of this medium is deformed. restoring forces then reversing the deformation. For example, Sound Waves propagate via air molecules colliding with their neighbors. When the molecules collide, they also bounce away from each other (a restoring force). This keeps the molecules from continuing to travel in the direction of the wave. Mechanical waves can be both transverse and longitudinal. This type of propagation is at the third or higher horizons associated with vector fields and energy momentum of force propagations.*

   机械波通过媒体发生变形、恢复力和反变形进行传播，例如，声波通过空气分子与邻近分子碰撞传播。当分子碰撞时，它们也会相互反弹 *(*一种恢

复力），使得分子不能继续沿着波的方向运动。机械波可以是横向的，也可以是纵向的。这种传播是在第三或更高的层界上，与力传播的矢量场和能量动量有关。

2. *The second main type, electromagnetic waves, do not require a physical medium. Instead, they consist of periodic oscillations of fields originally generated by charged particles, electrically and magnetically. Since it can therefore travel through a vacuum, these types vary in wavelength, and include Radio Waves, microwaves, infrared radiation, visible light, ultraviolet radiation, X-rays and gamma rays. All electromagnetic waves are transverse with their vector potentials correspondent to the physical oscillations at the physical horizons that are perpendicular to the propagation of energy transfer, or longitudinal: the oscillations are parallel to the direction of energy propagation at the second horizon.*

   第二种主要类型是电磁波，不需要物理媒体。取而代之的是，它们最初由带电粒子产生组成电场和磁场的周期性振荡，它们可以通过真空，波长有不同类型，包括无线电波、微波、红外线、可见光、紫外线、*X*射线和伽马射线，等。所有电磁波都可以是横向传播，其矢量势气对应于垂直于能量转移传播的物态层上的物理振荡，或是纵向的：振荡与第二层上的能量传播方向平行。

3. *As a part of dark energy, the photon and graviton waves are virtual entanglements over spaces by a duality of the commutative conjugations, which are a result of a yin yang movement of interweaves as the boost and spiral fields of their scalar potentials. The entanglement is transversely superposing, where operation of the superphase modulations generates and mediates interweaving disturbance at the second horizon in the form of light and gravitational potentials, virtually.*

作为暗能量的一部分，光子波和引子波具有对易共轭传播的对偶性，通过虚态相互交织的阴阳运动，以标量势气的幅度场和相度场，实现超空间纠

缠。实际上，在这种情况下，纠缠是由横向超引实现调制性操作，在第二层界以光子和引子势气场的形式实现调制、交织和互动。

Interference of field propagation is a phenomenon in which the interaction of potentials is correlated or coherent with each other, either because they come from the same source or because they have the same or nearly the same phase modulations. Interference effects can be observed with all types of waves, for example, light, radio, acoustic, surface water or gravity fields.

场传播干扰是指势气场互辅作用和相互交织的相干现象，可以起因于它们来自同一个源，也可以起因于它们具有相同或几乎相同的调制相位。所有类型的波，例如光、无线电、声波、地表水或重力场，都可以观察到相干效应。

Coherence of two emission sources are perfectly entanglements if they have a constant phase difference and the same frequency. It is a basic property of the third-type waves that engages a pair of the potential interference asymmetrically, which is common during the ontological interweavement. The behaviors have become a very critical concept in quantum fields. More generally, coherence describes all properties of the correlation between the commutative quantities between interruption duality of superphase modulations.

如果两个发射源具有恒定的相位差和相同的频率，则它们的相干性具有全纠缠性，这是第三类波的一个必要特性，可以构成一对势气场的协称性互动，这个交织特性在本体场中是很常见的，它也已成为量子场论中一个极重要的概念。更具有普遍意义的是，相干表现的是对偶对易之间和宫位调制之间所具有相关的定量特性。

10. 互动力 Force Interaction

As the constituents of the objects in the virtual regime, their formations and interruptions of elementary particles are in principle not complex, because, they are operated under the laws of energy and event operation, which are fundamentally superposing and structurally bonds to each level of quantum energies, giving rise to or embodying as the energy enclave of physical objects. This implies their internal interruptions have no forces at all. However, once embodied into the mass enclaves in the physical domain, their interactions expose gradually as the massive forces, some of which are defined as and known as the four "fundamental" forces, described by the classical physics as the following:

作为虚域中目标快的组成部分，其基本粒子的形成和交互性，原则上并不复杂，因为它们是在能量定律和事件操作定律下运行的，这些定律基本上是超引性，并在结构上与每一个量子能级结合和绑定，产生或体现为物质的能量飞地；这意味着他们的内部交互完全没有力，然而，一旦被纳入物态领域的质量飞地，它们之间的相互作用就逐步暴露为物质力，这些力被定义为已知的四种“基本”力，由经典物理描述如下：

1. *Weak Force - Weak interaction, or weak nuclear force is responsible for radioactive decay, which plays an essential role in nuclear fission. Electroweak Interaction is the unified description of two of the four known fundamental interactions of nature: electromagnetism and the weak interaction.*

   弱力 - 弱相互作用或弱核力是导致放射性衰变的原因，它在核裂变中起着至关重要的作用。弱电相互作用是对自然界已知四种基本作用中两种的统一描述：电磁作用和弱相互作用。

2. *Strong Force - Strong interaction is the mechanism responsible for the strong nuclear force (also called the strong force, nuclear strong force). At the range of a femtometer, it is the strongest force, being approximately 137 times stronger than electromagnetism, a million*

times stronger than weak interaction and about 1038 times stronger than gravitation. In classical view, "the strong nuclear force ensures the stability of ordinary matter, confining quarks into hadron particles, such as the proton and neutron, and the further binding of neutrons and protons into atomic nuclei. Most of the mass-energy of a common proton or neutron is in the form of the strong force of field energy; the individual quarks provide only about 1% of the mass-energy of a proton".

强力 - 强相互作用是产生强核力 *(*又称强核力、核力*)* 的机制。在飞米级的范围内，它作用力非常大，约是电磁力的*137*倍，弱相互作用的*100*万倍，引力的*1038*倍。在经典概念中，强大的核力确保了普通物质的稳定性，将夸克限制在质子和中子等强子核中，并进一步将中子和质子结合成原子核。一个普通的质子或中子的大部分质能是以场能的强力形式存在的；单个夸克只提供质子质能的*1%*左右。

3. *Electromagnetic Force - A type of physical interaction that occurs between electrically charged particles, describable by field propagation.*

电磁力 - 一种发生在带电粒子之间的物理相互作用，可通过场传播来描述。

Gravity - All things with energy are brought entanglement toward (or gravitate toward) one another, including stars, planets, galaxies and even light and sub-atomic particles.

万有引力 - 所有有能量的物体都会相互纠缠 *(*或被引力相互吸引*)*，包括恒星、行星、星系，甚至光和亚原子粒子。

Despite of some of the enigmatic descriptions or empirical evidences, it is our human observers using a force to detect them physically that makes their behaviors appear as complex or various forces, which is not the original principles of the nature. After all, force is not the natural foundation at all.

尽管有一些令人费解描述或经验证据，但正是我们人类观察者使用一种力来对它们进行物理探测，使得它们的行为呈现为复杂和多种力，这并不是自然界最初原理。毕竟，力不是自然的基础。

In reality, the elementary particles evolve from sub-atomic to atoms, to chemical elements, to molecular, to biological DNA, to physical cosmics, consistently and progressively. Irrelevant to those destructive forces from the observers, so called four fundamental forces above, their bonds are at energy levels of natural structures topologically and operated vividly by the *YinYang* superphase modulations, elegantly or inconceivably. Therefore, our physical detectable forces might be hardly or little effects to the horizon nature of the topology that gives rise from elementary particles to life creatures and to cosmic galaxies. Remarkably, physical principles are as simple as to follow the laws of yinyang duality, conservation of energy，event horizon，and energy bonds, naturally.

事实上，基本粒子从亚原子演化到原子，再演化到化学元素，再演化到分子，再演化到生物DNA，再到演化到物态宇宙，是一个连续不断和持续稳定的过程。与观测者的探测破坏力无关，也就是上面所说的四种基本力，它们亲在自然结构的能量纽带水平的拓扑架构上，优雅地或不可思议地通过阴阳宫位调制生动地运作着。因此，我们的物理探测力，对从基本粒子到生物到宇宙星系的拓扑结构的层界性质，其影响是微不足道的，值得注意的是，物理原理很简单，自然地遵循阴阳二象性定律，能量守恒定律、事件层界定律和能级纽带定律，等。

Worlds in Universe constitutes an YinYang topological pair of manifolds, each of which represents unique superphase dimensions, transforms objects within or into their neighborhood or subsets, and orchestrates events across multiple superphase and spaces. As a duality of the universal topology, these manifolds are central to many parts of worlds, allowing sophisticated structures, evolving into natural events, determining systematic solution sets, and carrying out natural laws and principles. Any objects in the universe has a sequence of events corresponding to the historical or future points of worlds appearing as a type of curve in the universal manifest. Defined by global parameters of the world or universe, a universe line is curved out in a continuous and smooth coordinate system representing events as a collection of points. Each point has multidimensional surfaces, called World Plane, with analogue associations among the worlds. In our universe, scopes and boundaries among each world are composed of, but not limited to, the homeomorphic duality: virtual and physical worlds. A universe can be graphically visualized as, for example, the lines in two-dimensions of the virtual and physical coordinates.

宇宙世界是由一对阴阳拓扑的流形组所构成，每个流形有着其独特的象度和维度，将其中对象在其邻域或子集内进行相互转化，由此，协调各事件跨越各象维时空域，作为二象性的宇宙拓扑，这些流形是世界各部分的核心，组成任意复杂的结构，演变

自然事件的行为，确定解决系统的方案，并执行自然法则和原则。宇宙中的任何对象都具有一系列事件，这些事件作为历史或未来世界点以一种宇宙曲线的形式表现出来，由世界或宇宙的全局参数来定义宇宙线在连续平滑坐标系中的曲线，显现为事件点的集合。每个点都有称为世界平面多维表面，与各世界范畴具有拟模关联。在我们的宇宙中，每个世界间的范围和边界由同胚二象性组成：虚态世界和物态世界，例如，宇宙可以由虚态和物态组成二维坐标的可视化图形。

In order to present universal principles precisely, it is necessary to define mathematical formulations of universal laws and institute a fundamental framework. We visualize nature of the topologies as a common picture describing the evolution, and consequent stagnation of their virtual and physical realization and characteristic behaviors. Our universe is constituted of virtual-physical topology and dynamic duality, which are two of the most critical intrinsic principles in our universe, representing the philosophy of physics at the heart of all life environments. Topological dualities orchestrate and harmonize our life along numerous horizons, such as particles-antiparticle, spirit-substance, male-female, and any other forms of existence in our physical and ontological worlds. A hierarchical theory is a philosophically and strategically unified formalism aligning with the intrinsic structures such that the mathematics turns out to have closely concise analogues in topology, logic and computation.

为了准确地阐述宇宙公理，必需先定义宇宙定律的数理表达方法，并构成一个基本框架。我们用自然拓扑作为通用的视化想象来描述和实现虚态和物态特征的演化和消亡的本质和结果；虚态与实态的拓扑和动态二象性是我们宇宙中最重要的两个内在组成原则，表明了所有生命环境中心的物理性哲学，拓扑二象性在许多层面中调控和协调我们的生活，例如，粒子-反粒子，精神-物质，男性-女性，以及我们在物理和本体世界中任何其它二象性的存在形式，拓扑层次理论是一种哲学上和战略上对表象形式与内涵结构相一致的统一，使得数学在拓扑逻辑和计算方面具有非常简洁的模拟表达方式。

1. 自然二象性 Duality of Nature

As the nature duality, our world always manifests a mirrored pair in the imaginary part or a conjugate pair of the complex manifolds, such that the physical nature of P functions is associated with its virtual nature of V functions to constitute a duality of the real world functions. Among them, the most fundamental dynamics are our virtual resources of the universal energies, known as *Yin* "−" and *Yang* "+" virtual matter, with neutral balance "0" as if there were nothing. Each type of the virtual instance $(+,0,-)$ appearing as energy fields has their own domain of the relational manifolds such that one defines a Y^- (Yin) manifold while the other the Y^+ (Yang) manifold, respectively. They jointly present the two-sidedness of any events, operations, transportations, and entanglements, each dissolving into the other in the alternating streams that generates the life of entanglements, conceals the inanimacy of resources, and operates the event actions.

作为自然界的二象性，我们的世界总是在虚部共轭表现出一对镜像的复流形，使得 P 函数的物态性质与其 V 函数的虚态性质相关联，构成了现实世界的二象性互动功能。其中，在我们宇宙中，最基本的动态学是称被为阴"−"和阳"+"能量源的暗模块，其中性平衡"0"犹如什么都没有。每种以能量场形式出现的暗模块 $(+,0,-)$ 都有各自相关流形域，因此，我们可以分别定义一种阴（Y^-）流形和另一种阳（Y^+）流形。它们共同阐明呈现任何事件、操作、传输和纠缠的两面性，每一个都对偶交织形成交替流，产生纠缠生态和化归无生命态资源，并运作事件行为，等。

The principle of *Yin* and *Yang* is the logical operations or substantial states that all things exist as a duality of the inseparable and complimentary opposites, which are neither materials nor energy. Produced from *Wuji* (无极) or nothing, they are complementary, interrelated, interconnected, and interdependent, each opposite giving rises to the other, as they operate in tangible interaction.

阴阳原理是万物以二象性对偶面为不可分割的逻辑操作或本体共轭，它们既不是物质也不是能量，由无极产生的“无中生有”，互助互补、相辅相成、互相关联、相互依存，各自在有形的互动运作中都会产生其对立面。

Yin (Y^-) and *Yang* (Y^+), or simply - and +, are the states of, processes to or operations on an element or an object, which form a coherent fabric of our nature, as exhibited in all real existence. *YinYang* (阴阳) duality is a part of the supernatural principles in an environment of virtual space that Chinese tradition has developed the profound metaphysics and established scientifically the natural laws of *Xing* (性) or *YinYang*: the reciprocal interaction of the opposites is to cause all universal phenomena.

阴 (Y^-) 和阳 (Y^+)，或简单的-和+是元素或对象的状态、过程或操作，它们形成了我们本体的连贯结构，显现于所有真实存在的形式。阴阳二象性是中国传统发展的超自然法则的一个深刻部分，科学地确立了在虚拟宫位环境中的性或“阴阳”的自然规律：对立相互作用是导致一切宇宙现象的源泉。

For the conceptual simplicity, our natural topology refers the states, events, and operations of “physical” functions to the yin supremacy, confined as physical or Y^- manifold, and of “virtual” functions to the yang supremacy, confined as virtual or Y^+ manifold. Because of this yinyang nature, our world always manifests a mirrored pair in the imaginary part, a conjugate pair of a complex manifold. As a global duality of virtual and physical worlds or yin and yang manifolds, various states of both virtual and physical spaces are describable at global domains where emerge as events, operate in zone transformations, and transit between state energies and mass enclaves. Therefore, a universal topology consists of two manifolds: *Yin* and *Yang* manifolds, progressively and complementarily rising through various stages of alternating streams – *Entanglements*.

鉴于概念上的简明化，我们的自然拓扑学将“实态”优势的状态、事件和操作称为阴至上，限制为物理或Y^-流形，将“虚态”优势称为阳至上，限制为虚态或Y^+流形。由于这种阴阳性，我们的世界总是在虚部表现出镜像对，形成一个复流形的共轭对。作为虚

态世界和实态世界或阴阳流形的一种全局二象性，各种状态的虚态宫位和实态空间都可以在全域中进行描述，包括作为事件的出现，区间转换的操作，状态能量和物质飞地之间转换，等。所以，一个宇宙拓扑由两个流形组成：阴和阳流形，逐步和互补地上升不同阶段而交替流通：纠缠。

Figure 2.1.1: Yin and Yang alternating stages
图 *2.1.1:* 太极阴阳交替状态

In accordance with the alternating cycles, the evolutionary process operates from *YinYang* events to states of dual phases (二相), four symbols (四象), and eight trigrams (八卦), sequentially. The dynamics of sixty-four pairwise permutations of hexagrams (六十四卦) expounds the well-known *Yi Jing* (*I-Ching*) or "*Book of Changes*", correspondent to astronomy, astrology, geography, geomancy, anatomy, *Chinese* medicine, and elsewhere, studied philosophically and practiced empirically for over five millennia. Although these topics will potentially have its scientific development further, it will not be addressed here in this book.

按照交替周期，演化过程依次从阴阳事件到二相、四象、八卦。经过五千多年的哲学性研究和经验性实践，六十四对六卦排列的动态学阐述了著名的《易经》，对应于天文、占星术、地理学、风水学、解剖学、中医学，等学科。虽然这些潜在课题将会推动科学的更进一步发展，但本书将不再作论述。

Finally, we refer the states, events, and operations of "physical" functions to the yin supremacy, implying the *Spacetime* manifold parallel to its global domain with the spatial relativistic dynamics, symmetry characteristics, and of "virtual" functions to the yang supremacy, implying the *Timespace* manifold transformational to its reciprocal domain for physical observations with the general commutative dynamics and asymmetry characteristics, respectively. A world plane of the universe manifold is a global duality of virtual and physical worlds or yin and yang manifolds.

最后，当我们把作为以阴为“物理”优势的状态、事件和操作时，就意味着与其全局域平行的时空流形具有狭义相对运动和对称特征；然而，当我们简明地把它作为以阳为“虚拟”优势的状态、事件和操作时，就意味着空时流形转换为它的物态互易域时，具有通常的对易动态和协称特性的物理可观测量。宇宙流形的世界平面是由虚拟世界和物理世界构成的，即，阴阳流形的全域二象性。

2. 能量和质量 Energy and Mass

Energy is a property of the states associated with the variables in virtual worlds, which are mutable in the transformation between virtual and physical worlds, or between massless and massive substances of a matter. In a physical world, energy appears inexorable, intractable, and transferable among the states. Virtual instances are embedded in or emerge as the formation of energy. Apparently, energy is characterizable at the virtual world such that, in physics for example, it can only be describable or usable at its properties, which are well established in the contemporary physics as "energy has i) the quantitative property that must be transferred to an object in order to perform work on, or to heat, the object; and ii) the conserved quantity, the law of conservation of energy states, that can be converted in form, but not created or destroyed".

能量，是一种状态属性，含有虚态世界的事件和变量，换言之，是虚态世界的表象或特性，可以在虚、实态世界间被变易和转换，表现为具有或不具有质量的事态。在实态世界，能量表现为不能被创造或消灭，且能从一种形态转化成另一种形态；虚态事例隐含于、并涌现为能量形态。显然，在虚态世界中，能量特性是可表征的，例如在物理学中，它只能用它的性质来描述或应用，这在当代物理学中已经被很好地确立为：i) 为了给对象进行作功或加热，能量必须在对象之间转移时具有定量性；ii) 状态量守恒的能量守恒法则是：形态可以转换，但不能创造或消亡。

Mass is the enclave of energies or virtual objects that is embodied in a physical world only. As the outer world, a physical matter has mass enclosure, whereas, as the inner world, a virtual world is commonly massless energy. For example, the states of mathematical formulation of entanglements for the energy-mass conversion is characterized by the magic "i" in the virtual complexes as conjugation，named as *Messon*:

质量是能量虚态廓形的飞地，它只体现在物态世界中。从为外部世界看，物体具有一个质量廓体，而其内部，虚拟世界通常是无质量的能量。例如，能质转换的数学纠缠公式的状态特征是含有奇妙的虚数“i”为标识的，形成虚拟共轭复数对，称为质量子：

$$E_n^{\mp} = \pm\, imc^2 \qquad : (E)^2 = (mc^2)^2 \rho \qquad (2.2.1)$$

$$\phi^{\mp} = \pm\, i \qquad : \rho = \phi^{-}\phi^{+} = 1 \qquad (2.2.2)$$

where m is the rest mass. Compliant with a duality of *Topology of Universe*, it redefines, extends and completes *Einstein* mass-energy equivalence, introduced in 1905, into the virtual energy states as one of the essential formulae of the natural philosophy. The terms of “negative” or “positive” energy must be associated with its virtual state precisely. Appearing as a massive enclave, energy and matter is a duality of *YinYang* nature of universe.

其中，m 是静态质量。吻合于宇宙拓扑的二象性原理，上式将爱因斯坦于1905年引入的质能等效作公式，重新定义、扩展和完善到虚能状态，成为自然哲学中极其重要的一个公式。由此，“负”或“正”能量的表述，必须精确地与其内涵的虚态能量联系起来，表现为一个质量整体，能量与事态遵守宇宙阴阳的二象性相法则。

At the zero mass, it is well known that a super interruption of virtual matter is superposing among objects or energies in the virtual word, such as light-wave interference where exists no forces at all. In other words, mass is a source of “forces” for physical interactions only in physical world. Based on the evolutionary topology of universe, forces cannot be the fundamental formations to give birth to a physical world. Because of the superposing interaction of natural energy, the laws of natural philosophy imply no singularity exist during mass inauguration at or before its initial phase of the physical acquisition.

众所周知，在零质量的情况下，虚态世界中虚拟超引交互的事态或能量间是线性叠加的，犹如，光波干涉根本不存在力的作用，换句话说，质量体才是物态世界中相互作用“力”的来源。所以，基于宇宙拓扑的进化结构，力不是产生物理世界的根本组体，由于，自然界的能量是通过超引交互形成相互作用，自然哲理定律也就阐明了：在物态初始阶段的物质诞生过程中不存在 “力” 的奇点。

3. 宇宙拓扑 Universal Topology

Universe is the whole of everything in existence that operates under a topological system of natural laws for, but not limited to, physical and virtual events, states, matters, and actions. It constitutes and orchestrates various domains, called *World*, each of which is composed of hierarchical manifests for the events, operations, and transformations among the neighborhood zones or its subsets of areas, called *Horizon*. An event or operation is naturally initiated by and interoperated among each of horizons, worlds, and universe. Together, they form the comprehensive situations of the horizon, life steams of the world, and environments of the universe.

宇宙是一切事物的存在的整体，在自然法则的拓扑系统下运作，包括但不限于物态和虚态事件、状态、事态和行为。它构成并协调各种称为世界的各个领域，每个域都由事件、操作和邻域或子域 (也称为层界) 之间的转换的层次化表示和组成系谱。任何事件或操作都是在层界、世界和宇宙的交互作用中自然地引发和协互操作，共同构成层界、生命流世界和宇宙环境的综合情景。

As one of the universe domains, for example, our world is consisted by the laws of yinyang principles, characterizable as Y^-Y^+ and known as a duality of YinYang (阴阳 in Chinese) entanglement for the *Event Operations* to transform and transport among the neighborhood zones or its subsets of areas, giving rise to physical horizons. In mathematics, representing the complementary opponents and operating as the resource of the motion dynamics for all natural states and events, *Universal Topology* in our natural philosophy is simply a complex conjugation as a *YinYang* duality of *Physical* (W^-) and *Virtual* (W^+) worlds:

例如，作为宇宙的一个领域，我们的世界是由阴阳原理性法则构成的，其特征是著名的阴阳（Y^-Y^+）二象性纠缠，用于在邻域或子集之间事件操作的转换和运通，从而产生物态层界。在数学中，阴阳表示为互补因子，是所有自然状态和事件运动的动态资

源，在我们的自然哲学中，宇宙拓扑简明为犹如一个复数共轭：物态世界（W^{-}）和虚态世界 (W^{+}) 的阴阳二象性，可以表述为：

$$W^{\mp} = We^{\pm i\vartheta} \quad \text{or} \quad W^{\mp} = P \pm iV \qquad (2.3.1)$$

Using *Euler's* formula, the two formulae are equivalent. Since the amplitude *W* is physical supremacy and the phase ϑ is virtual supremacy, a virtual event λ operation is implicit to *W* and explicit to ϑ. This is what lies at the core foundation for the gauge field.

按照欧拉公式，这两个公式是等价的。由于振幅 *W* 是物态优先，相位 ϑ 是虚态优先，因此虚态事件 λ 运算对 *W* 是隐性的，对 ϑ 是显式的。这正是规范场的核心基础所在。

A universal environment is composed of events or constituted by hierarchical structures of both massless and massive objects, events, states, matters, and situations. These hierarchical structures of the global manifold are respectively defined as *Virtual World*, where it operates supremacy of virtual event, or *Physical World*, where it performs supremacy of physical actions. Together, the virtual and physical worlds form one integrated world of the universe and interoperate as the complementary opponents of all natural states and events.

宇宙环境是由事件组成的，它由无质量或有质量的大量模块、事件、状态、事态和情景的层次结构所组成的。全域流形的这些层次结构可以分别定义为运行虚拟事件至上的虚态世界，或执行物态行为至上的物态世界，虚拟世界和物理世界一起构成了一个完整美妙的宇宙世界，并作为所有自然状态和事件的互补因子，进行互操作。

Philosophically, the virtual world is referred to as the inner world, the physical world as the outer world, and together they form holistic lives in universe. There are multiple levels of inner worlds and outer worlds. Outer worlds include physical matter of living beings and inanimate objects. Inner worlds are instances of situations, with or without energy or mass formations. Between virtual and physical worlds, there are three domains with each of their own type of spaces or times, respectively defined by:

在哲学上，虚态世界可称之为内部世界，物态世界也可称之为外部世界，它们共同构成宇宙中完整的生命体，其中有许多层次的内在世界和外在世界，外部世界包含有生命物体和无生命物质，内在世界是具有或没有能量或质量形态的事景。在虚态世界和物态世界之间呈现有三个域，每个域具有各自类型的空间或时间，分别定义为：

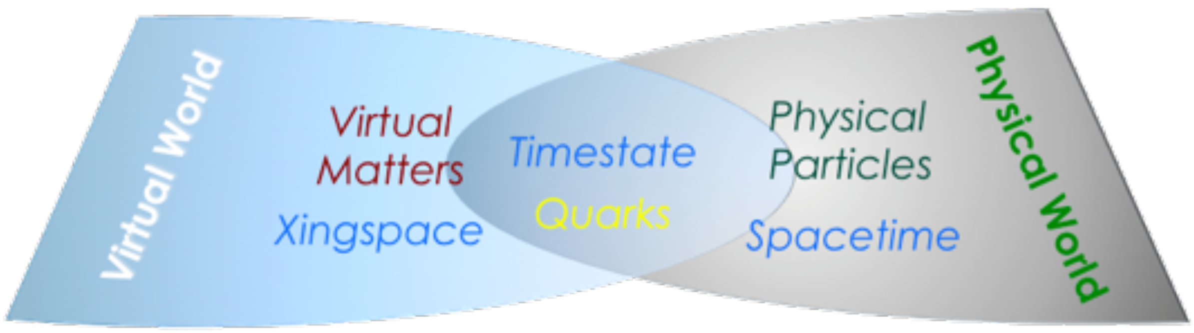


Figure 2.3.1: Domains of Worlds,
图 *2.3.1:* 世界的各个域

1. *Xingspace: Xingscope in virtual worlds.*
   性宫：虚态世界中的性态范畴。
2. *Timestate: Statescope between virtual and physical worlds.*
   时态：虚态世界和物态世界之间的状态范畴。
3. *Spacetime or Timespace: Spacescope in physical worlds, where it implies Spacetime as the Y^- primacy and Timespace as the Y^+ primacy in the physical worlds.*
   时空或空时：物态世界中的空间和时间范畴，隐含着：空时是物态世界中以阴Y^-为优势，时空是物理世界中的以阳 Y^+ 为优势。

In virtual worlds, yinyang interactions under xingspace produce a set of fields through the circular movements of the yinyang elements. This results in the virtual objects birthing reproductions or annealing cyclical processes, bi-directionally transforming into or from the timestate fields. The movements between xingspace modulated virtual worlds and dimensionally confined physical worlds or spacetime dynamics give rise to the physical horizons.

在虚态世界中，性宫的阴阳相互作用是通过阴阳元素的循环运动而产生的一系列势气场间的互动，从而导致虚态目标模块的产生或化归的循环过程和运动，并在时间状态场中进行双向性置换；虚态世界调制着性宫运动，它与受限于空间维度的物态世界或空时运动之间的运动，就构成了各类物理性层界。

4. 流形 Manifolds

Because each manifold has unique representations, worlds do not exactly coincide nor require full-transportations to pass from one to the other through commonly shared natural foundations. Therefore, our universe manifests as an associative framework of objects, crossing neighboring worlds of manifolds. *Word Events* λ can permeate into the three dimensions as the mutually orthogonal units: a coordinate manifold of physical world $P(\mathbf{r}, \lambda)$, a coordinate manifold of virtual world $V(\mathbf{k}, \lambda)$, and a coordinate manifold of global function $G(\lambda)$, shown in Figure 1.6.1.

因为每一个流形都有独特的表现形式，所以各世界并不完全一致，不需要全部通过共同的自然基础结构从一个流形到另一个流形进行传输。因此，我们的宇宙表现为各模块的联合框架，跨越流形的相邻世界，世纪事件 λ 可以通过三维相互正交的坐标来渗入：物理世界的坐标流形 $P(\mathbf{r}, \lambda)$、虚拟世界的坐标流形$V(\mathbf{k}, \lambda)$、全局功能的坐标流形 $G(\lambda)$，如图所示。

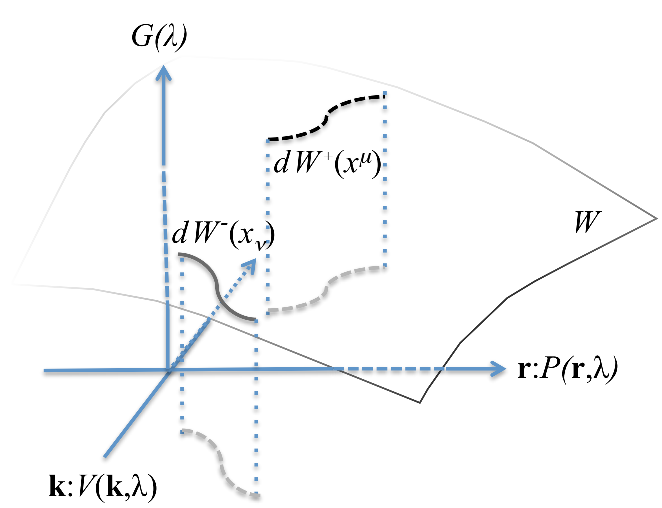


Figure 1.6.1: Worlds of Universal Topology
图 *1.6.1:* 宇宙拓扑世界

where $P(\mathbf{r}, \lambda)$ is parameterized by the coordinates of spatial vector $\mathbf{r}(\lambda) = \mathbf{r}(x_1, \cdots)$, and $V(\mathbf{k}, \lambda)$ is parameterized by the coordinates of *timestate* vector $\mathbf{k}(\lambda) = \mathbf{k}(x^0, x^{-1}, x^{-2}, \cdots)$. The global functions in $G(\lambda)$ axis is a collection of common objects and states of events λ, with unique functions applicable to both virtual and physical spaces of the world *W*. In other words, a universe manifold is visualized as a transitional region among the associated manifolds of the worlds, which globally forms the topological hierarchy of a universe. A curve in this three-dimensional manifold $\{\mathbf{r}, \mathbf{k}, G(\lambda)\}$ is called a *Universe Line*, corresponding to intersection of world planes from the two-dimensions of virtual and physical regimes of *YinYang* ($Y^{-}Y^{+}$) manifolds.

其中，$P(\mathbf{r}, \lambda)$ 由空间向量 $\mathbf{r}(\lambda) = \mathbf{r}(x_1, \cdots)$ 的坐标参数化，$V(\mathbf{k}, \lambda)$ 由时间状态向量 $\mathbf{k}(\lambda) = \mathbf{k}(x^0, x^{-1}, x^{-2}, \cdots)$ 的坐标参数化。$G(\lambda)$ 轴上的全局函数是事件的公共模块和状态的集合，具有适用于世界 *W* 的虚态和物态双重空间的特殊函数，也就是说，宇宙流形被视为关联世界流形之间的过渡区域，它在全局上形成了宇宙拓扑层次。三维流形 $\{\mathbf{r}, \mathbf{k}, G(\lambda)\}$ 中的一条曲线称为宇宙线，对应于阴阳流形的虚态 *V* 和物态 *P* 域构成世界平面的两维交集。

As a two-dimensional plane, the virtual positions of $\pm i\mathbf{k}$ naturally form a duality of the conjugate manifolds: $Y^{-}\{\mathbf{r} + i\mathbf{k}\}$ and $Y^{+}\{\mathbf{r} - i\mathbf{k}\}$. Each of the system constitutes its world plane $W^{\pm}$ distinctively, forms a duality of the universal topology $W^{\mp} = P \pm iV$ cohesively, and maintains its own sub-coordinate system $\{\mathbf{r}\}$ or $\{\mathbf{k}\}$, specifically and respectively. Because of the two dimensions of the world planes $\{\mathbf{r} \pm i\mathbf{k}\}$, each transcends its event operations further down to its sub-coordinate system with extra degrees of freedoms for either physical dimensions $\mathbf{r}(\lambda)$ or virtual dimensions $\mathbf{k}(\lambda)$. For example, in the scope of space and time duality at event $\lambda \propto t$, the compound dimensions become the tetrad-coordinates, known as the following spacetime manifolds:

作为一个二维平面，虚位置 $\pm i\mathbf{k}$ 自然地形成对偶性共轭流形：$Y^{-}\{\mathbf{r} + i\mathbf{k}\}$ 和 $Y^{+}\{\mathbf{r} - i\mathbf{k}\}$。每一个系统分别构成其世界平面 $W^{\pm}$，相干地形成宇宙拓扑 $W^{\mp} = P \pm iV$ 的对偶性，并分别保持其子坐标系 $\{\mathbf{r}\}$ 或 $\{\mathbf{k}\}$的独特性。由于世界平面具有两个维度 $\{\mathbf{r} \pm i\mathbf{k}\}$，每一个都超越了各自的事件操作，进一步延伸到它们子坐标系，对于物理维度 $\mathbf{r}(\lambda)$ 或虚拟维度 $\mathbf{k}(\lambda)$ 都提供了额外的辅助自由度。例如，在事件 $\lambda \propto t$ 的时间和空间的二象性范畴，复合维度成为四维坐标，形成以下时空流形：

$$x_m \in \check{x}\{x_0, x_1, x_2, x_3\} \subset Y^-\{\mathbf{r} + i\mathbf{k}\} \qquad : x_0 = ict,\ \check{x} \in Y^- \tag{2.4.1}$$

$$x^\mu \in \hat{x}\{x^0, x^1, x^2, x^3\} \subset Y^+\{\mathbf{r} - i\mathbf{k}\} \qquad : x^0 = -x_0,\ \hat{x} \in Y^+ \tag{2.4.2}$$

As a consequence, a manifold appears as or is combined into the higher dimensional coordinates, which results in the spacetime manifolds in the four-dimensional spaces.

结果，流形以高维坐标的形式出现，或组合成高维坐标系，从而在四维空间中形成时空流形。

In complex analysis, events of world planes $W^\pm$ are holomorphic functions：

在复分析中，世界平面事件 $W^\pm$ 是全纯函数：

$$G(W^+, W^-, \lambda) = G(\hat{x}, \check{x}, \lambda) \qquad : W^\pm \in Y^\pm \subset \mho \tag{2.4.3}$$

$$W^+(\hat{x}, \lambda) = P(\hat{x}, \lambda) - iV(\hat{x}, \lambda), \qquad W^-(\check{x}, \lambda) = P(\check{x}, \lambda) + iV(\check{x}, \lambda) \tag{2.4.4}$$

representing a duality of complex-conjugate functions of one or more complex variables $\check{x}$ and $\hat{x}$ in neighborhood spaces of every point in its universe regime of an open set $\mho$.

它表证了一个或多个复变量的复共轭函数，在其开集 $\mho$ 宇宙域的每个点上，具有邻域空间中的一个或多个复变 $\check{x}$ 和 $\hat{x}$ 的对偶量。

These formulae are called the Y^-Y^+ *Topology of Universe*. Composed into a Y^- component, the world W^- is in the manifold of yin supremacy which dominants the processes of reproductions or animations. Likewise, composed into a Y^+ component, the world W^+ is in the manifold of yang supremacy which dominants the processes of creations or annihilations.

这些公式被称为宇宙的 Y^-Y^+ 阴阳拓扑。由Y^-元素组成的世界 W^-，是以阴流形为优势，支配着繁衍和盛生的过程。同样，由Y^+元素组成的世界 W^+，是以阳流形为优势，支配着创生与湮灭的过程。

Together, the two world planes $\{\mathbf{r} \pm i\mathbf{k}\}$ compose the *two-dimensional* dynamics of *Boost*, a residual generators, and *Spiral*, a rotational contortions for stresses, which function as a reciprocal or conjugate duality transforming and transporting global events among sub-coordinates. Consequently, for any type of the events, the

$Y^{-}Y^{+}$ functions are always connected, coupled, and conjugated between each other, a duality of which defines entanglements as the virtually inseparable and physically reciprocal pairs of all natural functions.

这两个世界平面 $\{\mathbf{r} \pm i\mathbf{k}\}$ 合在一起构成了幅度的驻流激发子和相度的扭矩激发子，对偶共轭互易地转化和运通全局事件，从而，进入各子坐标系统。因此，对于任何类型的事件，$Y^{-}Y^{+}$ 函数总是相互连接、耦合和共轭的，二象性决定了任何纠缠的自然功能具有虚态不可分离性和物态相互对偶性。

5. 世界平面 World Planes

In the universe, a world has a permanent form of global topology, localizes a region of the universe, and interacts with other worlds rising from one or the other with common ground in universal conservations. Our universe, manifests as an associative framework of worlds, illustrated as a global function $G(R,\Omega)$ of a world plane, the *Two Dimensions* (R,Ω) as the mutually independent and implicitly interweave units: an r-coordinate of physical manifold and a Ω-coordinate of virtual manifold. This Ω coordinate is named as a ***Superphase***, representing an event at the virtual states implicit to the physical dimensions. The global functions in $G(\lambda)$ axis are a collection of common objects and states of events λ, with unique functions applicable to both virtual and physical spaces of a holistic world *W*.

在宇宙中，一个世界具有永久形态的全域拓扑结构，其局域性构成宇宙的一个特区，并与其它世界相互作用组成具有宇宙守恒的共同体。我们的宇宙显现为组合世界的框架，表现为一个世界平面的全域函数$G(R,\Omega)$有二维参量 (R,Ω) ，形成物态流形的r-坐标和虚态流形的Ω-坐标，它们既显性地互为独立，而又隐性地相互交织的单元组。这个Ω-坐标被命名为**超级相位**，表征虚拟状态下的事件而隐含于物态维度，在$G(\lambda)$轴上，全域函数是事件λ的普适模块和状态的集合，具有独特功能而适用于包含虚态宫间和物态空间的整体世界。

The two-dimensions of a world plane characterize the motion dynamics of world lines such that, to its physical world, a straight line, named as *Boost*, is a residual and relativistic generator, and a point circle, named as *Spiral*, is a rotational and torque generator.

世界平面的二维特征描述了世界线的运动动态学，在其物理世界中，一条称为幅度直线是一个住留的相对激发子，另一个称为相度点圆是一个旋转和扭矩激发子。

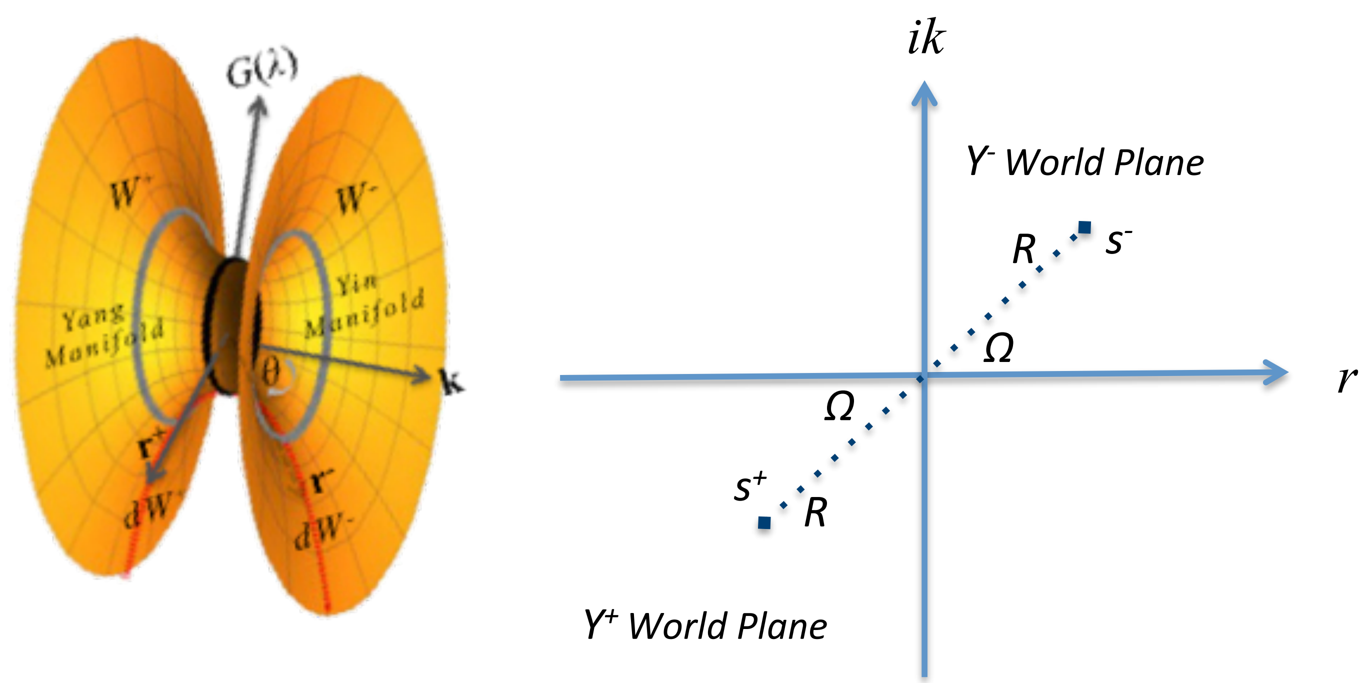


Figure 2.6.1: Two-Dimensional World Planes of Universal Topology
图 *2.6.1*：宇宙拓扑的二维世界平面

In fact, the *Boost* commutation generates photons and the *Spiral* entanglement produces gravitons. Remarkably in accordance with our philosophical anticipation, conservation of communication between the virtual and physical worlds is operated by superphase at the world planes, and maintained at the two-dimensional manifolds under the torsion invariance without r-singularity. For a duality of the polar-coordinate $\{r, k\}$ of world planes, illustrated in Figure 2.6.1, the two pints of the world lines $w^{\pm}$ are as the following:

事实上，幅度对易产生光子，相度纠缠产生引子。更引人注目的是，与我们哲学性预期非常一致的是，虚态世界和物态世界之间的运通守恒是在世界平面上由宫位进行操作，没有r-奇点，并在二维流形上保持扭转的不变性。对于世界平面极坐标$\{r, k\}$的二象性而言，如图2.6.1所示，世界线$w^{\pm}$上的两点，由如下方程给出：

$$w^{\pm} = r \mp ik = Re^{\pm i\Omega} \qquad : R \sin \Omega = ic\lambda, \ k = c\lambda \qquad (2.5.1)$$

where $k = c\lambda$ at the event λ. The amplitude $R = R(\lambda)$ is the one-dimension of physical location, and the superphase $\Omega = \Omega(\lambda)$ is the one-dimension of virtual modulation. It is straightforward to have their differential forms:

其中，$k = ic\lambda$ 在事件 λ 处。振幅 $R = R(\lambda)$ 是一维物态位置，而宫位位 $\Omega = \Omega(\lambda)$ 是一维虚态调制。显然，它们的微分形式为：

$$dw^{\pm} = e^{\pm i\Omega}(dR \pm iRd\Omega) \qquad\qquad dR\sin\Omega = icd\lambda - Rd\Omega\cos\Omega \qquad (2.5.2)$$

The compact form of the world-line metrics can now be written as the following:

世界线度规的紧凑形式，就可以写成以下形式：

$$\begin{aligned} dw^{+}dw^{-} &= (dR)^2 + (Rd\Omega)^2 \\ &= \frac{1}{\sin^2\Omega}\left[-(cdt)^2 + R^2(d\Omega)^2 - 2i(cdt)(Rd\Omega)\cos\Omega\right] \end{aligned} \qquad (2.5.3)$$

$$\dot{w}^{+}\dot{w}^{-} = \frac{1}{\sin^2\Omega}\left[(R\Theta)^2 - 2ic\big(R\Theta\big)\cos\Omega - c^2\right] \qquad : \dot{w}^{\pm} \equiv \frac{dw^{\pm}}{d\lambda}, \quad \Theta = \frac{d\Omega}{d\lambda} \quad (2.5.4)$$

where the $\Theta = d\Omega/d\lambda$ is the superphase potential, similar to a gauge field. It has the following solutions:

其中，$\Theta = d\Omega/d\lambda$是宫位势气场，类似于规范场。其解为：

$$R\Theta = ic\cos\Omega \pm c\sqrt{f(R,\Omega) - \cos^2\Omega} \qquad : c^2 f(R,\Omega) \equiv \dot{w}^{+}\dot{w}^{-}\sin^2\Omega + c^2 \qquad (2.5.5)$$

Assume the limited speed of the world-line curvature is at $\dot{w}^{\pm}$，the motion states has the following formation，considering the physical speed is much less than the speed of light:

假设$\dot{w}^{\pm}$为世界线上的有限速度，且小于或接近光速c速度，世界平面上的运动状态可以表为：

$$\Theta R = ce^{\pm i\Omega} \qquad\qquad : \quad \dot{w}^{\pm} \ll c^2 \qquad (2.5.6)$$

This implies that a galactic center be modulated by the superphase virtually as the rotational center at a constant speed as the amplitude.

这意味着， 一个星系中心被虚拟宫位所调制而形成旋转中心，且以速度c为振幅。

Since the ΘR field is near constant *c as a* complex component, a galactic center for a given Ω is at a fixed pair of the conjugation on the world planes virtually and with slow formation physically. Consequently, any of the stationary points on the world planes represents an eternal state of, for example, the rotational Milky Way.

由 ΘR 场为一个复数分量的常数c振荡，星系中心实际上处于世界平面上的一组虚拟共轭对，且有缓慢的物质形态。因此，世界平面上的任何固定点都代表着一个永恒的旋转状态，例如，旋转的银河系。

6. 世界共轭线 World Lines of Conjugation

For the conceptual simplicity, this manuscript refers the states, events, and operations of “physical” functions to the yin supremacy, and of “virtual” functions to the yang supremacy. For a Y^- manifold, it implies that *space and time is* parallel to its global domain with the spatial relativistic dynamics and symmetry characteristics. For a Y^+ Manifold, it implies that *time and space* transformational to its reciprocal domain for physical observations. Between them, they are operated by the general commutative dynamics with asymmetry characteristics, respectively.

出于概念上的简明扼要，本手稿将“物态”功能的状态、事件和操作称为阴优势，将“虚态”的相同功能称为阳优势。流形Y^-表征的是空间和时间平行于它的全局域，具有狭义相对性动力学和对称性特征，流形Y^+意味着时间和空间要转换到它对偶域才能进行物理性观测。它们之间分别由协称特性的广义对易动态学实行操作。

Therefore, a world plane of universe is a global duality of virtual and physical worlds composing yin $\mathbf{r}+i\mathbf{k}$ and yang $\mathbf{r}-i\mathbf{k}$ manifolds. The world line interval between the two imaginary events are entangling as a pair of conjugation:

因此，宇宙的世界平面是的全域二象性的虚态世界和物态世界组成的阴阳流形。两个镜像事件之间的世界线间隔，作为一对共轭纠缠在一起：

$$\Delta s^2 = \pm\left(\Delta\mathbf{r} - i\Delta\mathbf{k}\right)\left(\Delta\mathbf{r} + i\Delta\mathbf{k}\right) \qquad (2.6.1)$$

Philosophically, the interval is at a life of the virtual entanglement, which is associated the physical property with a global duality.

在哲学上，这个间隔是在虚态纠缠的生态中，与实态特性是通过全域二象性联系在一起。

Historically, in 1905–06 *Henri Poincaré* showed that by taking time to be an imaginary fourth spacetime coordinate *ict*, a *Lorentz* transformation can formally be regarded as a rotation of coordinates in a four-dimensional space with three real coordinates representing space, and one imaginary coordinate representing time, as the fourth dimension.

历史上，在1905-06年Henri Poincaré证明，通过将时间作为第四时空坐标为 *ict* 虚坐标，Lorentz变换可以正式地看作是四维空间中坐标的旋转，其中三个实坐标表示空间，一个虚坐标表示时间。

$$\Delta s^2 = (\Delta r)^2 - (c\Delta t)^2 \qquad : \Delta \mathbf{k} = c\Delta t \qquad (2.6.2)$$

or

$$\Delta s^2 = (c\Delta t)^2 - (\Delta r)^2 \qquad (2.6.3)$$

Equipped with a nondegenerate, the *Minkowski* inner product with metric signature is selected either (– + + +) as the space-like vectors or (+ – – –) as the time-like vectors. Unfortunately, most of the mathematicians and general relativists sticks to one choice regardless of the other or not both, such that, apparently, any object with the two "relative states" is "collapsed" at one of its states with the same collapsed outcome. Therefore, a duality of the two manifolds has been hidden or unknown in contemporary physics，unfortunately further leading to many ambiguous results.

配备了非简并的闵可夫斯基内积与度规特征，被选择为空间类向量或时间类向量。不幸的是，大多数数学家和一般相对主义者坚持一种选择，而不考虑另一种选择或两者都不同时选择，显然，任何具有两个“相对状态”的物体在其中一个状态表述下，都是“塌陷”的，具有相同的塌陷结果。因此，这两个流形的二象性在当代物理学中被隐秘了起来, 而不破察觉, 非常不幸地导致了许多含混不清的结果。

7. 势气场 Potential Fields

Governed by a global event λ under the universal topology, an operational environment is initiated by the virtual $\phi^{+}(\lambda)$ or physical $\phi^{-}(\lambda)$ *Potential Field* of a quantum tensor, a differentiable function of a complex variable in its *Superphase* nature, where the scalar function is also accompanied with and characterized by a single magnitude in *Superposition* nature with variable components of the respective coordinate sets of their own manifold. Corresponding to its maximal set of commutative and enclave states, a potential function defines the states of an energy system virtually and represses the degrees of freedom physically. Uniquely on both yinyang of the two-dimensional world planes, a potential functions as a type of virtual generators, field modulators, or dark energies that lies at the heart of all events, instances, or objects.

在宇宙拓扑总体事件的管辖下，虚势场 $\phi^{+}(\lambda)$ 或实势场 $\phi^{-}(\lambda)$ 的量子张量场构成一个操作环境，可以表示为可变分的复变宫位函数，标量函数伴随着一个单一量值，其特征是与各流形坐标集的可变分量具有叠加态特性，它对应的是最大对易态和飞地状态的集合。实质上，势气函数定义的是一个能量系统的虚拟状态，并赋予了物理上的自由度。在阴阳两个二维世界平面流形上，各势气场独自作为一种虚拟激发子、场态调制子或暗能量状态，是所有事件、事例或目标块的核心。

A potential field can be classified as a scalar field, a vector field, or a tensor field according to whether the represented horizon is at a scope of scalar, vector, or tensor potentials, respectively. For an object, each point of the fields $\phi^{\pm}(x, \lambda)$ is entangled with and appears as a conjugate function of the scalar field $\varphi^{\pm}$ in its opponent manifold. In order to regulate the redundant degrees of freedom in particle interruptions, the double streaming entanglements of a potential function consists of the complex-valued probability of relative amplitude $\psi(x)$ and spiral phase $\vartheta(\lambda)$, its formalism of which has the degrees of event λ actions shown by the following:

根据所代表的层界是否分别在标量、矢量或张量势气的范围内，势气场可分为标量场、矢量场或张量场，对应于同一个模块，势气场 $\phi^{\pm}(x,\lambda)$ 的每一点都与其互辅流形中所对应标量场的共轭势气场函数 $\varphi^{\pm}$ 组成纠缠互动。为了规范粒子互动过程中的简并自由度，势气函数的双流纠缠由相对振幅 $\psi(x)$ 和旋转相位 $\vartheta(\lambda)$ 的复值概率组成，表现为事件作用，形式如下：

$$\psi^{+} = \psi^{+}(\hat{x})\ exp[i\hat{\vartheta}(\lambda)] \qquad : x^{\mu} = x^{\mu}(\lambda),\ \lambda = \lambda(x^{\mu}),\ \psi^{+} = \{\phi^{+}, \varphi^{+}\} \qquad (2.7.1)$$

$$\psi^{-} = \psi^{-}(\check{x})\ exp[i\check{\vartheta}(\lambda)] \qquad : x_{\nu} = x_{\nu}(\lambda),\ \lambda = \lambda(x_{\nu}),\ \psi^{-} = \{\phi^{-}, \varphi^{-}\} \qquad (2.7.2)$$

The amplitude function $\psi(x) : x = x(\lambda)$ represents the spatial position of the wave function complying with *superposition* or implicit to its λ event. The spiral function $\vartheta(\lambda) : \lambda = \lambda(x)$ features superphase of the λ event at the quantum states implicit to the physical dimensions. At a physical horizon, each point of the fields becomes flux density or acceleration, giving rise to the correspondent vector $\phi^{\pm}(x,\lambda) \mapsto V^{\pm}(x,\lambda)$ or tensor $V^{\pm}(x,\lambda) \mapsto M^{\pm}(x,\lambda)$ that entangles with its opponent for commutations as well as associates with the modulations in the scalar potential $\varphi^{\pm}$ fields.

振幅函数$\psi(x) : x = x(\lambda)$表示波函数的空间位置，遵守宫位叠加，并隐含λ事件。相度函数$\vartheta(\lambda) : \lambda = \lambda(x)$表示$\lambda$事件中宫位特征的量子态特征。在物态层界上，场的每一点都变成流数密度或加速度，从而产生相应的势气矢量$\phi^{\pm}(x,\lambda) \mapsto V^{\pm}(x,\lambda)$或张量$V^{\pm}(x,\lambda) \mapsto M^{\pm}(x,\lambda)$，由标量共轭势气场 $\varphi^{\pm}$ 场中的相关调制下，实现互辅双方的纠缠对易。

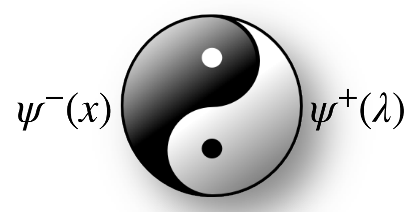
Under the universal topology, a field $\psi(x,\lambda)$ is incepted or operated under either virtual $\phi^{+}(\lambda)$ or physical $\phi^{-}(x)$ primacies of an Y^{+} or Y^{-} manifold respectively and simultaneously：

在宇宙拓扑下，场 $\psi(x,\lambda)$ 是分别在以虚势优态 $\phi^{+}(\lambda)$ 的 Y^{+} 流形和以实势优态 $\phi^{-}(x)$ 的 Y^{-}流形中，同时进行开源和操作

$$\rho(x,\lambda) = \psi^{-}\big(x(\lambda)\big)\psi^{+}\big(\lambda(x)\big) \qquad : \psi^{\pm} = \{\phi^{\pm}, \varphi^{\pm}\},\ \ x \in \{x^{\mu}, x_{m}\} \qquad (2.7.3)$$

where $x(\lambda)$ represents the spatial supremacy with the implicit event λ as an indirect dependence; and likewise, $\lambda(x)$ represents the virtual supremacy with the redundant degrees of freedom in the implicit coordinates x as an indirect dependence.

其中，显性$x(\lambda)$表示空间优先，隐含地间接依赖λ事件；同样， 显性$\lambda(x)$表示虚态优先，蕴含坐标x中含有间接简并的坐标自由度。



$$\rho(x,\lambda) = \psi^-\big(x(\lambda)\big)\psi^+\big(\lambda(x)\big)$$

Figure 2.7.1: Density of YinYang States
图 *2.7.1:* 阴阳状态密度

Decoherence - In physics of the twentieth century, the superposed wave functions are hardly correlated to a duality of the two-dimensional world planes. Instead, the four-dimensional manifold is limited to the physical existence within one world plane such that the reality is isolated or decoherence to the superposition: homogeneity and additivity. For example, a yinyang pair of the conjugate fields $\varphi \neq \phi^*$ becomes purely imaginary $\varphi = \phi^*$, upon which the superphase is collapsed at the physical states such as the density $\rho = |\phi|^2$. Unfortunately, this density decoherence has lost its meaning to neither fluxions nor entanglements, which are critical to both symmetric and asymmetric dynamics. Therefore, the wave decoherence of the system no longer exhibits the superphase interference or wave–particle duality as in a double-slit experiment, performed by *Thomas Young* in 1801. Incredibly today, this superphase interference not only demonstrates a duality of the complex fields, or virtual conjugations:

退相干性 - 在二十世纪的物理学中，波函数叠加效应几乎与二维世界平面的二象性无关。那时的物理学被局限于四维流形，其自由度被限制在单个世界平面内，使得物态被孤立于或退相干到宫位叠加：各向同性和可叠加性。例如，一对阴阳共轭场 $\varphi \neq \phi^*$

变成纯镜像 $\phi = \phi^*$ 时，使得宫位叠加形成物理状态的塌陷密度 $\rho = |\phi|^2$。不幸的是，经过退相干，这种密度已经失去了它的本性意义，既没有流通，也没有纠缠，而流形与纠缠在对称和协称动态领域都是至关重要的命题。因此，波退相干的系统不再像1801年托马斯·杨所做的双缝实验那样表现出宫位干涉或波粒二象性。今天，令人难以置信的是，杨氏宫位干涉不仅证明了复数场或虚拟共轭的二象性：

$$\phi^{\mp} = \pm i \qquad : \rho = \phi^* \phi \equiv \phi^- \phi^+ = 1 \qquad (2.7.4)$$

but also is a parallel fashion to *Gauge Theory,* shown briefly in the sections below.

而且，它也是一种平行于规范理论的时髦方式，这将在下面的几个章节中简要介绍。

8. 事件演化 Event Evolution

Both time and space are the functional spectra of the events λ, operated by and correlate with their virtual and physical potentials, and generated by supernatural Y^-Y^+ events associated with their virtual and physical framework of universal topology. The event states on spatial-time planes are open sets and can either rise as subspaces transformed from the other worlds or confined as locally independent existence within their own domain. As in the settings of spatial and time manifolds for physical or virtual world, a global parameter $G(\lambda)$ of event λ on a world plane is complex differentiable not only at $W^{\pm}(\lambda)$, but also everywhere within neighborhood of *W* in the complex plane or there exists a complex derivative in a neighborhood.

时间和空间都是事件 λ 的功能谱，通过虚态和实态势气场的操作联系起来。由超自然阴阳（Y^-Y^+）事件产生，并与它们的虚态和物态拓扑结构相关联。时空平面上的事件状态是开放集，既可以作为从其他世界转换而产生的子空间，也可以作为局部独立存在而限于自己的域内。在物态或虚态世界时空流形的设置中，事件 λ 在世界平面上的全局参数 $G(\lambda)$ 不仅在 $W^{\pm}(\lambda)$ 处是可复微分的，而且在复平面的W邻域内也是处处可复微分的，也就是，在邻域中存在复导数。

By a major theorem in complex analysis, this implies that any holomorphic function is infinitely differentiable as an expansion of a function into an infinite sum of terms. In mathematical analysis, a complex manifold yields a holomorphic operation and is complex differentiable in a neighborhood of every point in its domain, such that an operational process can be represented as an infinite sum of terms:

根据复变分析理论中的一个重要定理，这意味着任何全纯函数都是无限可微的，因为它是一个函数展开成无穷项和的结果。在数学分析中，复流形产生全纯运算，并且在其域中的每个点的邻域上都是可复微分的，因此，一个操作过程可以表示为无穷项之和：

$$f(\lambda) = f\left(\lambda_0\right) + f^{'}\left(\lambda_0\right)(\lambda - \lambda_0)\cdots + f^n\left(\lambda_0\right)(\lambda - \lambda_0)^n/n! \quad (2.8.1)$$

$$f(\lambda) = f_0 + \kappa_1\dot{\partial}_{\lambda_1} + \kappa_2\dot{\partial}_{\lambda_2}\dot{\partial}_{\lambda_1} \cdots + \kappa_n\dot{\partial}_{\lambda_n}\dot{\partial}_{\lambda_{n-1}}\ldots\dot{\partial}_{\lambda_1} \quad : \lambda_i \in \{\dot{\partial}_{\lambda_i}\},\ \kappa_n = f^n\left(\lambda_0\right)/n! \quad (2.8.2)$$

known as the *Taylor* and *Maclaurin* series, introduced in 1715. Normally, a global event generates a series of sequential actions, each of which is associated with its opponent reactions, respectively and reciprocally.

称其为泰勒和麦克劳林数列，于1715年推出。通常，一个全局事件会产生一系列连续的动作，每一个动作都分别与对耦的反应相关，并互补关联。

9. 操作过程 Operational Processes

Following *Universal Topology*, world events, illustrated in the $Y^{-}Y^{+}$ flow diagram of Figure 2.9.1, operate the potential entanglements that consist of the Y^{+} supremacy (white background) at a top-half of the cycle and the Y^{-} supremacy (black background) at a bottom-half of the cycle. Each part is dissolving into the other to form an alternating stream of dynamic flows.

按照宇宙拓扑架构，如图2.9.1的阴阳（$Y^{-}Y^{+}$）流程图所示，世界事件操作着上半周期部分以Y^{+}为优势 (白色背景) 和下半周期部分以Y^{-}为优势 (黑色背景) 而组成的纠缠势气。每一部分都融入于另一部分中，形成一个动态互动的交替流。

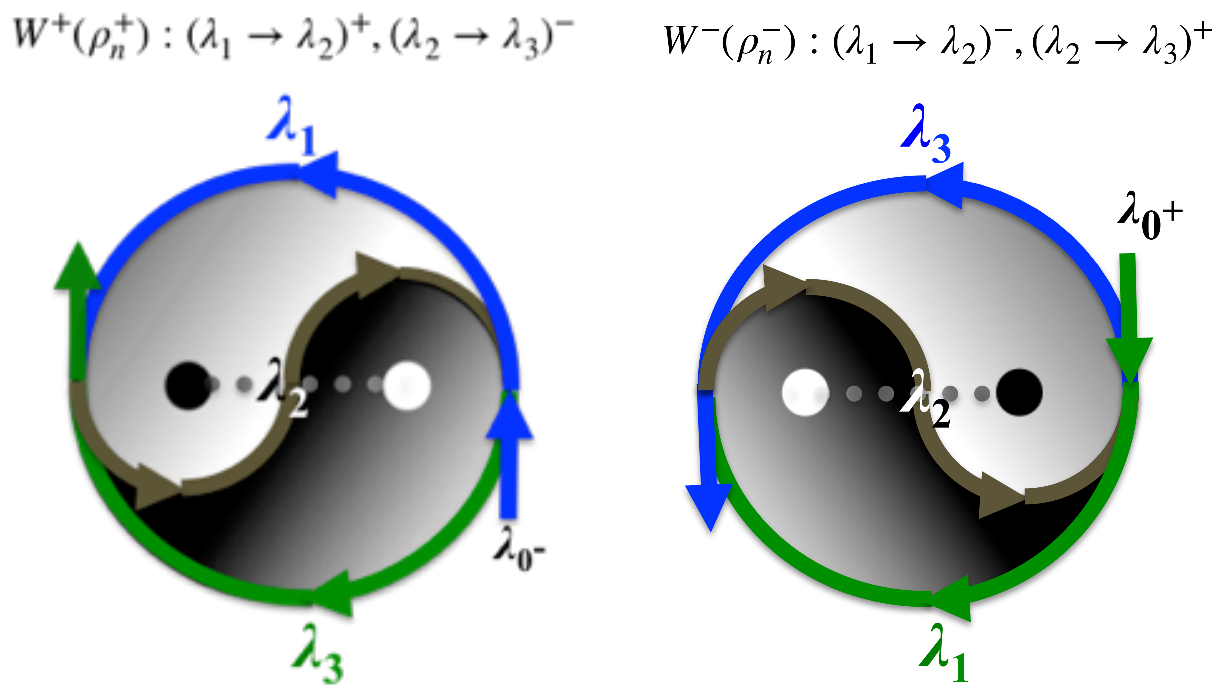


Figure 2.9.1: Event Operations of YinYang Processes: $\hat{\partial}^{\lambda} \circlearrowleft \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \circlearrowright \check{\partial}_{\lambda}$

图 *2.9.1:* 阴阳事件操作过程*:* $\hat{\partial}^{\lambda} \circlearrowleft \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \circlearrowright \check{\partial}_{\lambda}$

Their transformations in between are bi-directional antisymmetric transportations crossing the dark tunnel through a pair of the end-to-end circlets on the center line. Both of the top-half and bottom-half share the common global environment of the state density ρ_n that mathematically represents the $\rho_n^{+} = \phi^{+}\varphi^{-}$ for the Y^{+} manifold and its equivalent $\rho_n^{-} = \phi^{-}\varphi^{+}$ for the Y^{-} manifold, respectively.

它们之间的转换是通过中心线上的一对点到点的圆环穿越暗隧道的双向反对称通道。上半部分和下半部分共享状态密度 ρ_n 的公共全域场境，在数学上，状态密度 ρ_n 分别表示为 $\rho_n^+ = \phi^+\varphi^-$ 的 阳Y^+ 流形和其等价的 $\rho_n^- = \phi^-\varphi^+$ 的 阴Y^- 流形。

Besides, the left-side diagram presents the event flow acted from the inception of λ_{0-} through λ_1 λ_2 λ_3 to intact a cycle process for the Y^+ supremacy. In parallel, the right-side diagram depicts the event flow initiated from the event λ_{0+} through λ_1 λ_2 λ_3 to complete a cycle process for the Y^- supremacy. With respect to one another, the two sets of the *Universal Event* processes, cycling at the opposite direction simultaneously, formulate the flow charts in the quadrant-state expressions:

此外，左边图表显示了以 Y^+ 为优势的事件流开源于 λ_{0-} 到 $\lambda_1\lambda_2\lambda_3$ 的一个全循环过程；同时，右边的图表描述了以 Y^- 为优势的事件流起始于 λ_{0+} 到 $\lambda_1\lambda_2\lambda_3$ 的一个全循环过程。在两集互动的作用下，宇宙事件的过程，同时在相反方向上循环，形成流程的二组四象状态，表达式如下：

$$W^+ : (\hat{\partial}^{\lambda_1} \to \hat{\partial}_{\lambda_2}), (\check{\partial}^{\lambda_2} \to \check{\partial}_{\lambda_3}) \qquad \therefore W^+(\rho_n^+) : (\lambda_1 \to \lambda_2)^+, (\lambda_2 \to \lambda_3)^- \qquad (2.9.1)$$

$$W^- : (\check{\partial}_{\lambda_1} \to \check{\partial}^{\lambda_2}), (\hat{\partial}^{\lambda_2} \to \hat{\partial}_{\lambda_3}) \qquad \therefore W^-(\rho_n^-) : (\lambda_1 \to \lambda_2)^-, (\lambda_2 \to \lambda_3)^+ \qquad (2.9.2)$$

This pair of the interweaving system pictures an outline of the internal commutation of dark energy and continuum density of the entanglements.

这对交织系统，描绘了暗能量本性对易和纠缠性连续密度的轮廓。

Philosophically, it demonstrates that the two-sidedness of any event flows, each dissolving into the other in alternating streams, operate a life of situations, movements, or actions through least continuous helix-circulations aligned with the universal topology, which lay behind the context of the main philosophical interpretation of *World Equations*. In reality, it represents a cycle process of the *Quadrant-State* entanglements on the two-dimensional world planes to give rise to the infrastructure generators that produce a quadrant set of the spin 2x2 *matrices* and reciprocal 4x4 *gamma*-matrices at the second horizon and evolve into the generators of the *Lorentz* transform at the third horizon.

从哲学上讲，它演示了任何事件流的二象性，每一个事件流交替地融入到另一个事件流中，通过与宇宙拓扑一致的最小连续螺旋循环来运行一个活生生的情境、运行或动作，这就是从哲学上解释世界方程的主要背景。实际上，它代表了二维世界平面上四象状态纠缠的一个循环过程，产生了基础架构的激发子，在第二层界上形成一个由自旋 2x2 矩阵和转置 4x4 伽马矩阵组成的四象集，并在第三层界上，演化成洛伦兹变换的激发子。

10. 层界架构 Horizon Infrastructure

Horizon is the apparent boundary of a realm of perception or the like, where unique structures are evolved, topological functions are performed, various neighborhoods form complementary interactions, and zones of the worlds are composed through multi-functional transformations. Each horizon rises and contains specific fields as a construction of the symmetric and asymmetric dynamics within or beyond its own range. In other words, fields infer and vary from one horizon to the others, each of which are a part of and aligned with Universal Topology of the worlds. In physics, for example, the microscopic and macroscopic zones are in the separate horizons, each of which emerges its own fields and aggregates or dissolves between each others.

层界，是类似域之间的显然边界，在那里，独特结构的进化，拓扑功能的执行，邻域互补的作用，提供多功能相互转换而组成世界域。每一层界形成和提供特有的场，作为在其自身范围之内或之外的对称和协称动态的构造。换言之，场从一个层界到另一个层界是各不相同的，各个层界都从属于宇宙拓扑下的一个世界部分，并与之保持一致。例如，在物理学中，微观和宏观区域是处于不同的层界中，每个层界都呈现有自己的场，彼邻之间形成集聚或化合。

Under the topological framework, various horizons are defined as, but not limited to, timestate, microscopic and macroscopic regimes, each of which is in a separate zone, emerges with its own fields, and aggregates or dissolves into each other as the interoperable neighborhoods, systematically and simultaneously. Through the $Y^{-}Y^{+}$ communications, the expression of the tangent vectors defines and gives rise to each of the horizons.

在这个拓扑框架下，不同的层界被定义为，但不局限于，时间状态域（也称异态域）、微观域和宏观域，每一个域都处于自身独立，随着它自身场而出现，并且系统地

和同步地聚合或分解成互操作的邻域。通过 阴阳（$Y^{-}Y^{+}$）对易，每个层界的产生是由切向量来定义、表述和拓展。

As a part of *Universal Topology*, the virtual Y^{+} and physical Y^{-} duality architecturally defines further hierarchy of the event evolutions, its operational interactions and their commutative infrastructures. In the $Y^{-}Y^{+}$ manifolds, a potential field can be characterized by a set of the scalar function of $\{\phi^{+}, \varphi^{-}\} \in Y^{+}$ and $\{\phi^{-}, \varphi^{+}\} \in Y^{-}$ as *Ground Potentials*, to serve as a state environment of universal topology. Among the fields, their localized entanglements form up, but are not limited to, the density fields, as *First Horizon Fields*. The derivatives to the density fields are event operations of their motion commutations, which generate an interruptible tangent space, named as *Second Horizon Fields*, and further give rise to *Third Horizon* and beyond. In physics, the *Horizon Hierarchy* is shown by the following structure:

作为宇宙拓扑的一部分，虚态Y^{+}和物态Y^{-}二象体构造，在拓扑上进一步定义了事件演化的层次结构、交互操作和对易架构。在$Y^{-}Y^{+}$流形中，势气场可以用一组标量函数$\{\phi^{+}, \varphi^{-}\} \in Y^{+}$和$\{\phi^{-}, \varphi^{+}\} \in Y^{-}$ 作为基础势气场来表征宇宙拓扑的一个状态环境。在这些场中，它们的局域纠缠形成（ 但不只限于）作为第一层界场的密度。密度场的导数是其运动对易的事件操作，它产生一个可交互作用的切空间，称为第二层界场，并进一步产生第三层界，以此类推。在物理学中，层次结构可以表述如下：

1. *Ground Horizon: Potential fields of elementary particles* ($\{\phi^{+}, \varphi^{-}\}$, $\{\phi^{-}, \varphi^{+}\}$)

   基础层界：基本粒子的势气场 ($\{\phi^{+}, \varphi^{-}\}$, $\{\phi^{-}, \varphi^{+}\}$)

2. *First Horizon: Thermo-state density of World Planes* ($\rho^{+} = \phi^{+}\varphi^{-}$, $\rho^{-} = \phi^{-}\varphi^{+}$)

   第一层界：世界平面的热状态密度 *($\rho^{+} = \phi^{+}\varphi^{-}$, $\rho^{-} = \phi^{-}\varphi^{+}$)*

3. *Second Horizon: Flux continuity and commutation* ($\mathbf{f}_s^{\pm} = \partial\rho^{\pm}$)

   第二层界：流数的连续性和对易性 ($\mathbf{f}_s^{\pm} = \partial\rho^{\pm}$)

4. *Third Horizon: Force fields in spacetime manifolds* ($\mathbf{g}_s^\pm = \partial \mathbf{f}_s^\pm$)

   第三层界：时空流形的力场 ($\mathbf{g}_s^\pm = \partial \mathbf{f}_s^\pm$)

5. *Fourth Horizon: Commutation and continuity of acceleration fields* ($\mathbf{G}_v^\pm = \partial \mathbf{g}_v^\pm, \partial\phi \mapsto V$)

   第四层界：加速场的对易性和连续性 ($\mathbf{G}_v^\pm = \partial \mathbf{g}_v^\pm, \partial\phi \mapsto V$)

A Horizon Infrastructure defines scopes of, commutations between and relational hierarchy to the natural objects and events. For example, the *Standard Model* is a non-abelian gauge theory with the symmetry group $U(1) \times SU(2) \times SU(3)$, where $U(1)$ is the first horizon, $SU(2)$ the second horizon, and $SU(3)$ the third. This means that, at $U(1)$, it builds a structure as the building blocks for $SU(2)$, the $SU(2)$ builds another structure for $SU(3)$, and so on. In our model, the $SU(2)$ horizon is on the world plane described by

层界基础架构定义了自然对象和事件的范畴、对易和相关的层次结构。例如，标准模型是具有对称群 $U(1) \times SU(2) \times SU(3)$ 的非阿贝尔规范理论，其中 $U(1)$ 是第一层界，$SU(2)$ 是第二层界，$SU(3)$ 是第三层界。这意味着，在$U(1)$层处，它作为基础模块构建$SU(2)$结构，而 $SU(2)$ 作为构建 $SU(2)$ 结构的基础模块，依此类推。在我们的模型中，世界平面上 $SU(2)$ 层界表示为：

I. *A set of the 2x2 boost matrices (Eq. 4.2.5) that generates Sigma-matrix and produces photons, and*

   一组 *2x2* 幅度矩阵公式 *(4.2.5)*，生成 σ-矩阵，从而激发光子，并且

II. *A set of the 2x2 torque-matrices (Eq. 4.3.7) that provokes Epsilon-matrix and harvest gravitons.*

   一组 *2x2* 扭转矩阵公式 *(4.3.7)*，产生 ε-矩阵，从而激发引子。

At this second horizon, some objects acquire a part of their mass quantity (exert weak forces for partially physical interactions) and some have zero-mass (interactive virtually without force). Essentially, they are building blocks of a fully physical domain $SU(3)$. Only at the third horizon, particles have their full mass (strong force interactions). Associated with the mass enclave, a force is natural in physical domain but not in virtual world.

在第二个层界中，一些模块获得一部分质量 (对偏物理相互作用释放弱力) ，而另一些模块获得零质量 (几乎没有力的相互作用) ，实质上，它们是全物态域 *SU*(3) 的构建块。只有在第三个层界处，粒子才获得全质量 (强力相互作用)。所以，力在物理层域中是一个从属于质量飞地而形成的自然现象；但是，在虚态世界中，不存在质量飞地，也就不存在力。

A homogeneous system has a trace of diagonal elements where an observer is positioned external to or outside of the objects. The source of the fields appears as a point object and has the uniform *conservations* virtually at every point without irregularities in field strength and direction, regardless of how the source itself is constituted with or without its internal or surface twisting torsions. Whereas, a heterogeneous system has the off-diagonal elements of the symmetric tensors where an observer is positioned internal to or inside of the objects, and the duality of virtual annihilation and physical reproduction are balanced to form the local *Continuity* or *Invariance*.

各向同性系统有一个对角线元素的轨迹，可以定位在对象外部进行观察。场源以点模型的形式出现，无论场源本身是如何构成的，有无内部或表面扭转，在每个场点上几乎都具有一致的守恒性，没有场强度和方向不规则性。然而，异构系统具有对称张量的非对角元素，可以定位在对象内部进行观察，虚态湮灭和实态盛生的对偶平衡，组成了局域的连续性和不变性。

11. 空时流形 Spacetime Manifold

As a fascinating consequence, under the two-dimensions of the world planes, the horizon generators incept a freedom of the extra dimensions into the physical or virtual world, respectively giving rise to the third horizon, where it completes a full mass acquisition, and finally develops into the four-dimensional *Spacetime* manifold for physical objects, simultaneously.

一个极其有趣的结果是，在世界平面的两个维度下，层界激发子为物态或虚态世界开源摄取额外的自由维度，分别产生第三个层界，在第三个层界中，它们完成了获取形成全物质体的过程，同时，为准物质发展产生了四维时空流形。

From the world planes to the spacetime manifolds, the evolution can be visualized in mathematics for the rotational degrees $\{\theta, \phi\}$ of extra freedom as the following:

从世界平面到时空流形，其演化可以用数学的方法直观地表示为旋转的额外自由度$\{\theta, \phi\}$如下：

$$d\Sigma^2 = dr^2 + S_k(r)^2 \, d\vartheta^2 \qquad : d\vartheta^2 = d\theta^2 + \sin^2\theta \, d\phi^2 \qquad (2.11.1)$$

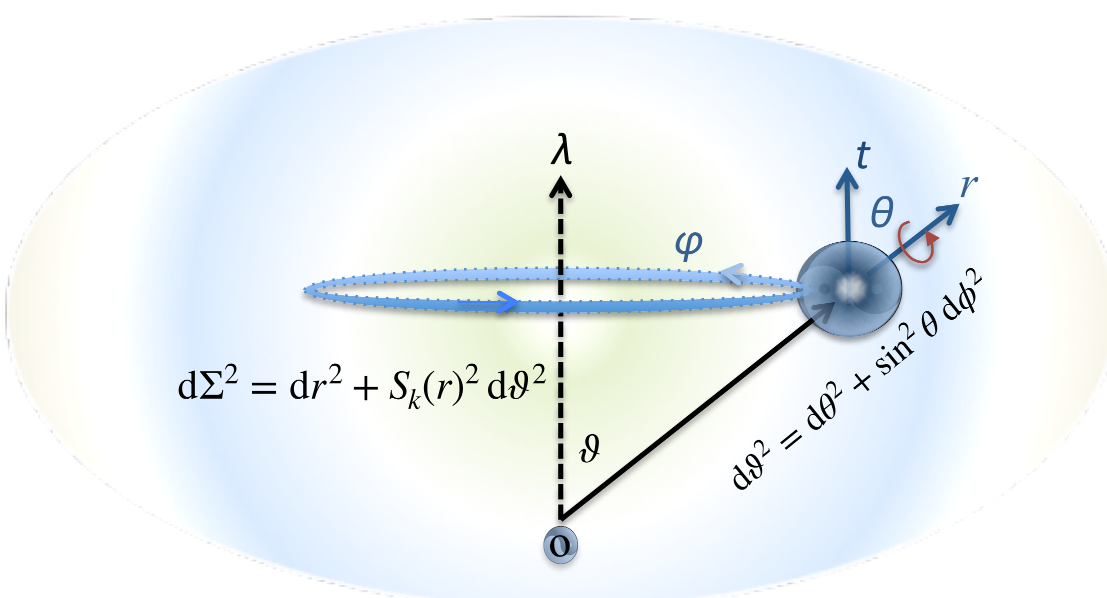


Figure 2.11.1: Evolution from World Planes into Spacetime Manifold
图 *2.11.1:* 世界平面到时空流形的演化

This whole process of inauguration of physical formations is classically known as spontaneous breaking. Thereupon, one spatial dimension on the world planes evolves its physical world with freedom of the extra two-coordinates, which results in a rotational *Central-Singularity*.

在经典物理中，这个物态诞生的整个过程被称为自发破裂。于是，世界平面上的一个空间维度，以摄取两个额外的坐标自由度，演化成物理世界，从而产生旋转中心的奇点。

In reality, the evolution is a course of events for inception of space associated with its reciprocal duality: sequential procedure, described by (2.8.1-2) and appeared as Time in physical world. By acquiring mass with freedom of spacetime, the nature of physical-supremacy characterizes the essential forces between physical objects and limits their interactive distances. As an associative affinity, the principle operates the gravitational attractions between the mass bodies, or gives weight to physical objects in residence.

事实上，进化是一个事件的过程，与其互辅二象性相关的空间开源：序列过程，在物理世界中呈现为时间，由方程 (2.8.1-2)。通过获取具有质量的时空自由度，物态主导的自然本性刻画了物体之间力的本性，并限制了它们相互作用的距离。作为一种关联与亲和，该原理操作着质量体之间的相互诱惑的引力，并赋予束缚于物体上的驻居性重量。

For the physical or virtual interactions, the fields have to across a wide range of physical domains, spanning spontaneously all length scales: from sub-atomic and particle physics, to molecular length scales of chemical and biological interest, to cosmological length scales encompassing the *Universe* as a whole. Among them, the first and second horizons described by the scalar fields are the essential core for the superphase modulations to all of the physical world. In contemporary physics, these essentials are simply named as *Dark Energy*, currently defined as “an unknown form of energy which is hypothesized to permeate all of space, tending to accelerate the expansion of the universe”. Disregard the ambiguous appellation in this definition, the term is delineated straightforwardly to “the unknown forms of energy”.

对于物态或虚态的相互作用，场必须跨越大范围的物理域，瞬间地跨越所有的长度范畴：从亚原子和粒子物理，到化学和生物的分子尺度，逐步到涵盖整个宇宙的宇宙尺度。其中，标量场所描述的第一和第二层域是宫位位调制物理世界的核心要素。在当代物理学中，这些要素还被简单地称为暗能量，目前它被定义为“一种未知形式的能量，用于假设能够渗透到所有空间，且导致宇宙的加速膨胀”。撇开这个定义中含糊不清的名称不谈，这个术语直接定义了“未知形态的能量”。

宇宙架构学 Universal Infrastructure

Chapter 3 第 3 篇

In this chapter, we advance *Mathematic Philosophy of Natural Principles* as a profound architecture of ideology to constitute the *Mathematical Framework*, upon which the event operations develop the intrinsic Infrastructure of the universe under the principles of *YinYang* interrupt processes and event evolutions. Together as the *Universal Architecture*, it carries out solidly all of *Universal Field Equations*, and gives rise to the mathematical foundations of evolutionary *Horizons* for *Energon Fields*, *Ontological Evolutions*, *Cosmic Dynamics*, and beyond.

在这一章中，我们将自然法则的哲理学进一步从深邃的思想框架体系来构建其数学结构，由此，事件操作在阴阳交互过程和事件演化的原理下，建立起宇宙内在的基础架构体系。作为宇宙结构的总体，它拥有所有的宇宙场方程，展开演化层界的基本原理，为能量子场论、本体进化论、宇宙动态学，等其他领域，奠定坚实的数学基础。

1. 数理性框架 Mathematical Framework

As a part of the natural architecture, the mathematical regulation of terminology not only includes symbol notation, operators, and indices of vectors and tensors, but also philosophically classifies the mathematical tools and scopes out their interpretations under the topology of universe.

作为自然结构体系的一部分，数学术语的规则不仅包含符号、算符、向量和张量的表示法，而且还从哲理学的角度对数学工具进行了分类，并在宇宙拓扑下界定了它们的演绎范围。

In order to describe the nature precisely, we define essentially a duality of the contravariant $Y^+ = Y\{\mathbf{r} - i\mathbf{k}\}$ manifold and the covariant $Y^- = Y\{\mathbf{r} + i\mathbf{k}\}$ manifold, respectively by the following regulations.

为了更准确地描述这些自然性质，我们分别用以下规则定义了阳变差逆流形 $Y^+ = Y\{\mathbf{r} - i\mathbf{k}\}$ 和阴变差协流形 $Y^- = Y\{\mathbf{r} + i\mathbf{k}\}$ 的一个对偶性，它们可以分别表述如下：

1. *Contravariance $\hat{\partial}^\lambda$ - One set of the symbols with the upper indices $\{x^\mu, u^\nu, M^{\nu\sigma}\}$, as contravariant forms, are the numbers for a set of the $Y\{\hat{x}\}$ basis of the Y^+ manifold labelled by its identity symbols $\{\hat{},^+\}$. "Contravariance" is a formalism in which the nature laws of dynamics operates the event actions $\hat{\partial}^\lambda$ locally, maintains its virtual supremacy of the Y^+ dynamics, and dominates the virtual characteristics under the manifold $\hat{x}$ basis.*

   阳变差 $\hat{\partial}^\lambda$ - 一组以上升指数为符号 $\{x^\mu, u^\nu, M^{\nu\sigma}\}$ 的逆方差形式，作为阳性（Y^+）为主导的变量运作，是由其标识符号 $\{\hat{},^+\}$ 标记的 Y^+ 流形的 $Y\{\hat{x}\}$ 基集。阳变差等同于"逆方差"的一种标识形式，在这种标识形式中，自然法则的动态学运作着局域事件的阳性（Y^+）行为 $\hat{\partial}^\lambda$，维持着 Y^+ 运动的虚态主导地位，支配着 $\hat{x}$ 坐标流形基中的虚态特性。

2. *Covariance $\check{\partial}_\lambda$ - Other set of the symbols with the lower indices $\{x_m, u_n, M_{ab}\}$, as covariance forms, are the numbers for a set of the $Y\{\check{x}\}$ basis of the Y^- manifold labelled by its identity symbols of $\{\check{}, ^-\}$. "Covariance" is a formalism in which the nature laws of dynamics performs the event actions $\check{\partial}_\lambda$, maintains its physical supremacy of the Y^- dynamics, and dominates the physical characteristics under the manifold $\check{x}$ basis.*

   阴变差 $\check{\partial}_\lambda$ - 另一组以降指数为符号 $\{x_m, u_n, M_{ab}\}$ 的协方差形式，作为阴性（Y^-）为主导的变量形式，是由其标识符号 $\{\check{}, ^-\}$ 标记的 Y^- 流形的 $Y\{\check{x}\}$ 基集。阴变差等同于“协方差”的一种标识形式，在这种标识形式中，自然法则的动态学运作着局域事件的阴性（Y^-）行为 $\check{\partial}_\lambda$，维持着其 Y^- 动态的物态主导地位，支配着 $\check{x}$ 坐标流形基中的实态特性。

Either contravariance or covariance has the same form under a specified set of transformations to the lateral observers within the same commutative basis as a common or parallel set of references for the operational event. The communications between the manifolds are related through the tangent space of the world planes, regulated as the following operations:

在同一幅度基域内的一组特定的变换下，对于侧面观察者来说，一组作为公共或平行参考系下的阴阳方差与事件操作，具有相同的对易变换形式。流形之间的交互通信是通过世界平面的切线域相关联的，按以下规律进行操作：

3. *Communications ($\hat{\partial}_\lambda$ and $\check{\partial}^\lambda$) - Lowering the operational indices $\hat{\partial}_\lambda$ is a formalism in which the quantitative or variable effects of an event λ under the contravariant Y^+ manifold are projected into, transformed to, or acted on its conjugate Y^- manifold. Rising the operational indexes $\check{\partial}^\lambda$, in parallel fashion, is a formalism in which the quantitative or variable effects of an event λ under the covariant Y^- manifold are projected into, transformed to, or reacted at its reciprocal Y^+ manifold.*

   通信 *($\hat{\partial}_\lambda$ 和 $\check{\partial}^\lambda$)* - 下降操作指数 $\hat{\partial}_\lambda$ 的公式形式，表示为，阳（Y^+）流形下事件 λ 的变量效应被投射、转化或作用到其共轭对象的阴（Y^-）流形

中。同样，上升操作指数 $\check{\partial}^{\lambda}$ 的公式形式，表示为，阴（Y^{-}）流形下事件 λ 的变量效应被投射、转化或作用到其共轭对象的阳（Y^{+}）流形中。

The dual yinyang variances are isomorphic to each other regardless if they are isomorphic to the underlying manifold itself, and form the norm (inner product) of the manifolds or world lines. Because of the reciprocal and contingent nature, the dual manifolds conserve their invariant quantities under a change of transform commutations and transport continuities with the expressional freedom of its underlying basis.

无论它们是否同构于自身流形并形成流形规范 (内积) 或世界线，对偶阴阳方差总是相互同构的。由于对偶流形的对易性和互辅性，它们在对易转换和连续传输下保持变换不变性，具有潜在基准的灵活标式。

As a part of the universal topology, these mathematical regulations of the dual variances architecturally defines further framework of the event characteristics, its operational interactions and their commutative infrastructures. In the $Y^{\mp}$ manifolds, a potential field can be characterized by a scalar function of potentials $\psi \in \{\phi^{+}, \phi^{-}, \varphi^{+}, \varphi^{-}\}$ as *Ground Fields*, to serve as a state environment of entanglements. Among the fields, their localized entanglements form up, but are not limited to, the density fields, as *First Horizon Fields*. The derivatives to the density fields are event operations of their motion dynamics, which generates an interruptible tangent space, named as *Second Horizon Fields*.

作为宇宙拓扑的一个部分，这些二象性变差的数学规则，在结构体系上进一步定义了事件特征、互动操作、以及对易架构。在阴阳（$Y^{\mp}$）流形中，为了提供纠缠状态环境的运作，势气场可以用 $\psi \in \{\phi^{+}, \phi^{-}, \varphi^{+}, \varphi^{-}\}$ 作为基态场的标量函数来描述。在这些场中，它们的局域纠缠在第一层界场形成 (但不限于) 密度场。密度场的导数是其运动动态的事件操作，所产生的一个可互动的切线空间，则称之为第二层界场。

2. 全释经典学 Interpretation to Classics

In quantum physics, a mathematical operator is driven by the event λ, which, for example at $\lambda = t$, can further derive the classical momentum $\hat{p}$ and energy $\hat{E}$ operators at the second horizon:

在经典量子物理学中，每一个数学算符操作都是由事件 λ 驱动的，例如在 $\lambda = t$ 处，事件 λ 可以进一步导出第二层界处的经典动量 $\hat{p}$ 算符和能量 $\hat{E}$ 算符：

$$\hat{\partial}^t : \dot{x}^\mu \partial^\mu = \left(-ic\partial^\kappa, \mathbf{u}^+ \partial^r\right) = \frac{i}{\hbar}\left(\hat{E}, \mathbf{u}^+ \hat{p}\right) \qquad : \partial^\kappa = \frac{\partial}{\partial x^0}, \mathbf{u}^+ = \frac{\partial x^r}{\partial t} \tag{3.2.1}$$

$$\check{\partial}_t : \dot{x}_m \partial_m = \left(+ic\partial_\kappa, \mathbf{u}^- \partial_r\right) = \frac{i}{\hbar}\left(\hat{E}, \mathbf{u}^- \hat{p}\right) \qquad : \partial_\kappa = \frac{\partial}{\partial x_0}, \mathbf{u}^- = \frac{\partial x_r}{\partial t} \tag{3.2.2}$$

$$\hat{E} = -i\hbar\partial/\partial t, \qquad \hat{p} = -i\hbar\nabla \qquad : \partial^r = \partial_r = \nabla \tag{3.2.3}$$

For $\mathbf{u}^\mp = \pm c$, one has the classical operators at the third horizon:

对于 $\mathbf{u}^\mp = \pm c$，在第三层界上有一个经典算符操作：

$$\check{\partial}^\lambda \check{\partial}_\lambda = \hat{\partial}^\lambda \hat{\partial}_\lambda = \hat{\partial}_\lambda \check{\partial}^\lambda = \hat{\partial}^\lambda \check{\partial}_\lambda = \frac{\partial^2}{\partial t^2} - c^2\nabla^2 \equiv c^2 \Box^+ \qquad : \lambda = t \tag{3.2.4}$$

$$\hat{\partial}_\lambda \hat{\partial}_\lambda = \check{\partial}^\lambda \check{\partial}^\lambda = \check{\partial}_\lambda \hat{\partial}_\lambda = \hat{\partial}^\lambda \check{\partial}^\lambda = \frac{\partial^2}{\partial t^2} + c^2\nabla^2 \equiv c^2 \Box^- \qquad : \lambda = t \tag{3.2.5}$$

where the operators $\Box^\pm$ extend the d'Alembert operator $\Box$ into the Y^-Y^+ properties. These operators can normally be applied to the diagonal elements of a matrix or trace, observable to the system explicitly or externally.

其中，运算符 $\Box^\pm$ 将 d'Alembert 运算符 $\Box$ 扩展到阴阳（Y^-Y^+）属性中。这些算符通常可以应用于矩阵的对角元素：迹，系统可以显式地或外部地观察到这些元素。

It is worthwhile to emphasize that *a*) the manifold operators of $\{\partial^\mu, \partial_m\}$, including traditional “operators” of $\{\partial/\partial t, \partial/\partial x, \nabla, \hat{E}, \hat{p}, \cdots\}$ are exclusively useable as mathematical tools only, and *b*) the tools do not operate or perform by themselves unless they are driven or operated by an event λ, implicitly or explicitly.

值得强调的是，a) $\{\partial^{\mu}, \partial_{m}\}$ 的流形算子，包括传统的 $\{\partial/\partial t, \partial/\partial x, \nabla, \hat{E}, \hat{p}, \cdots\}$ “算子”，只能作为数学工具使用；b) 除非由事件 λ 隐式或显式地驱动或操作，否则这些工具不会自行操作或自行执行运作。

To seamlessly integrate with the classical dynamic equations, it is critical to interpret or promote the natural meanings of *Lagrangian* mechanics $\mathscr{L}$ in forms of the dual manifolds. As a function of generalized information and formulation, *Lagrangians* $\mathscr{L}$ can be redefined as a set of densities, continuities, or commutators, entanglements of the $Y^{-}Y^{+}$ manifolds respectively. A few of the examples are:

为了与经典动力学方程无缝结合，将二象性流形的形式，自然地解释或推广到拉格朗日力学的含义是至关紧要的。作为一个通用化信息公式的函数，拉格朗日作用量 $\mathscr{L}$ 可以被重新定义为一组密度、连续流或对易子的集，分别表述各类阴阳（$Y^{-}Y^{+}$）流形的纠缠效应。举几个例子如下：

1. *The Lagrangians‘ density can be defined by the formulae:*
   拉格朗日密度，可由以下公式定义：

$$\tilde{\mathscr{L}}_{\rho} = \psi^{-}(\check{x})\ \psi^{+}(\hat{x})\ exp\big(i\vartheta(\lambda)\big) \qquad (3.2.6)$$

2. *For a scalar or vector entanglement, the commutator Lagrangians can be expressed by their local- or inter-communications:*
   对于一个标量或矢量纠缠，拉格朗日对易子可以用它们的局域或域际间对易通信来表示：

$$\tilde{\mathscr{L}}_{L}^{\pm} = -\frac{1}{c^{2}}\left[\hat{\partial}^{\lambda}\hat{\partial}^{\lambda}, \check{\partial}_{\lambda}\check{\partial}_{\lambda}\right]_{x}^{\pm} \quad : Local\text{-}Commutators \quad 局域对易通信 \quad (3.2.7)$$

$$\tilde{\mathscr{L}}_{I}^{\pm} = -\frac{1}{c^{2}}\left[\hat{\partial}_{\lambda}\hat{\partial}_{\lambda}, \check{\partial}^{\lambda}\check{\partial}^{\lambda}\right]_{x}^{\pm} \quad : Inter\text{-}Commutators \quad 际域对易通信 \quad (3.2.8)$$

where the index x=s is for scalar potentials and x=v for vector potentials. These formulae generalize the *Lagrangian* and state that the central quantity of *Lagrangian,* introduced in 1788*,* represents the bi-directional fluxions that sustain, stream, harmonize and balance the dual continuities of entanglements of the $Y^{-}Y^{+}$ dynamic fields. Apparently, there are a variety of ways to comprehend or empathize on a *Lagrangian* function under a scope of isolations.

其中，指数 $x=s$ 时表示标量势气，而 $x=v$ 时表示矢量势气。这些公式不仅推广了拉格朗日公式，并指出1788年引入的拉格朗日核心是表示维持、流动、协调和平衡的阴阳（Y^-Y^+）动态纠缠场和二象连续性的双向流数量。显然，在任何一个封闭范围内，理解或强化拉格朗日函数就会有各种各样的解释方法。

3. 共轭二象性 Conjugation Duality

Signatures of Manifolds - the world line interval between the two events are described concisely by complex conjugation:

流形特征值 - 两个事件之间的世界线间隔可以简要地用复共轭描述为：

$$\Delta s^2 = \pm\left(\Delta \mathbf{r} - i\Delta \mathbf{k}\right)\left(\Delta \mathbf{r} + i\Delta \mathbf{k}\right) \qquad \because \mathbf{k} = ict \qquad (3.3.1a)$$

This represents a duality of Virtual (Y^+) and Physical (Y^-) worlds. In mathematics, however, the above equation become equivalent to the following expression, deliberately.

这代表了虚态 (Y^+) 世界和物态 (Y^-) 世界的二象性。然而，在数学中，上面的方程也就可蓄意地表达为如下等价式：

$$\Delta s^2 = (c\Delta t)^2 - (\Delta r)^2 \quad or \quad \Delta s^2 = (\Delta r)^2 - (c\Delta t)^2 \qquad (3.3.1b)$$

In the relativity literature of spacetime manifold, the sign conventions are associated with a minor or YinYang variation of the metric signatures (+−−−) and (−+++). Either of conventions is widely used within spacetime field in modern physics, but unfortunately not both. Besides, although the above two equations are mathematically equivalent, the philosophical interpretations of the two equations are fundamentally led to the conflict or inconsistent results: i) a conjugate duality of unified virtual and physical topology; and ii) Einstein time of twin paradox at the "collapsed" states.

在许多时空流形的相对论文献中，符号约定与度规特征关联着的一个阴阳变化，有二种小调音阶： (+−−−) 和 (−+++)。这两种约定的其中一种在现代物理学中广泛应用于时空领域，但不幸的是这两种约定都没有被同时应用。此外，尽管上述两个方程在数学上是等价的，但对这两个方程的哲学解释，从根本上导致了大相径庭的结果：i) 虚态和物态统一拓扑的共轭对偶性；ii) 在"塌缩"状态下孪生佯谬的爱因斯坦时钟悖论。

Harmonic Oscillator - For the quantum harmonic oscillator, the "ladder operator" method, developed by *Paul Dirac*, defines a pair of the operators $\tilde{a}_n^+$ and $\tilde{a}_n^-$ for Hamiltonian in the complex conjugate formula,

谐振子 - 对于量子谐振子，保罗·狄拉克提出的“阶梯算符”方法中，在复共轭公式中定义了一对哈密顿 $\tilde{a}_n^+$ 和 $\tilde{a}_n^-$ 算符，

$$\tilde{H} = \sum_{n=1}^{N} \hbar\omega_n \left(\tilde{a}_n^\pm \tilde{a}_n^\mp \mp \frac{1}{2} \right) \qquad \tilde{a}_n^\mp = \sqrt{\frac{m\omega_n}{2\hbar}} \left(r_n \pm \frac{i}{m\omega_n} \hat{p}_n \right) \tag{3.3.2}$$

$$\tilde{a}_n^+ |n\rangle = \sqrt{n+1}\,|n+1\rangle \qquad \tilde{a}_n^- |n\rangle = \sqrt{n}\,|n-1\rangle \tag{3.3.3}$$

It means that $\tilde{a}_n^+$ acts on |n⟩ to produce |n+1⟩, and $\tilde{a}_n^-$ acts on |n⟩ to harvest |n-1⟩. For this reason, $\tilde{a}_n^-$ and $\tilde{a}_n^+$ are the conjugate “operators” alternatively called "annihilation", a physical yin animation, and "creation", a virtual yang event, because they destroy and create particles, which correspond well to Universal Topology of our natural philosophy. However, the above *Hamiltonian* is mathematically equivalent to or can be “collapsed” to the sum of the kinetic energies of all the particles, plus the potential energy of the particles associated with the system:

这意味着，$\tilde{a}_n^+$ 作用于 |n⟩ 为收获 |n+1⟩，而 $\tilde{a}_n^-$ 作用于 |n⟩ 为化归 |n-1⟩。由于这些原因，算子 $\tilde{a}_n^+$ 和 $\tilde{a}_n^-$ 形成共轭“算符”，因为它们化归和创造粒子，分别被称之为虚态阳行的“创造”和物态阴运的“湮灭”，这完全符合我们自然哲学的宇宙拓扑法则。然而，上述哈密顿量在数学上等于或可以“塌缩”为所有粒子的动能之和，加上与系统相关的粒子的势气能：

$$H = \sum_{n=1}^{N} T_n + V \qquad : T_n = \frac{1}{2} m(\omega_n x)^2 \tag{3.3.4}$$

Therefore, the interpretations of the two approaches are fundamentally led to the contradict results: i) the conjugate operations of virtual $\tilde{a}_n^+$ creation and physical $\tilde{a}_n^+$ annihilation; or ii) the classical or “collapsed” states $H = T + V$ of the kinetic and potential energies.

由此，对这两种方法的解释从根本上导致了自相矛盾的结果：i) 虚态创造和物态湮灭的共轭运动； 或 ii) 动能和势气能的经典“塌缩”状态。

Gauge Invariance - It represents a duality of virtual supremacy of time and physical supremacy of space. Mathematically, a partial derivative of a function of several variables is its derivative with respect to one of those variables, while the others held as constant, shown by the examples.

规范不变性 - 代表了时间的虚态主权和空间的物态主权的二象性原理。从数学上讲，对由几个变量组成函数的一个偏导数，是它对其中各变量进行导数时，保持其他变量不变，如下例所示：

$$\frac{\partial\left[\psi(x)e^{i\vartheta(\lambda)}\right]}{\partial\lambda} = \psi(x)\frac{\partial\vartheta(\lambda)}{\partial\lambda}e^{i\vartheta(\lambda)} = \frac{\partial x}{\partial\lambda}\frac{\partial\vartheta(\lambda)}{\partial x}\left[\psi(x)e^{i\vartheta(\lambda)}\right] \quad (3.3.5)$$

Therefore, an event λ operates a full derivative D^λ or D_λ to include all indirect dependencies of magnitude and phase wave function with respect to an exogenous λ argument:

因此，一个 λ 事件操作的全导数 D^λ 或 D_λ，包含所有与外源 λ 参数有关的振幅和相位波函数的间接相关性：

$$D^\lambda\psi(x^\mu,\lambda) = \left[\frac{\partial x^\mu}{\partial\lambda}\frac{\partial}{\partial x^\mu}\psi(x^\mu)\right]e^{-i\hat{\vartheta}(\lambda)} + \psi(x^\mu)\frac{\partial}{\partial\lambda}e^{-i\hat{\vartheta}(\lambda)} = \dot{x}^\mu\left(\frac{\partial}{\partial x^\mu} - i\Theta^\mu\right)\psi(x^\mu,\lambda) \quad (3.3.6)$$

$$D_\lambda\psi(x_\nu,\lambda) = \left[\frac{\partial x_\nu}{\partial\lambda}\frac{\partial}{\partial x_\nu}\psi(x_\nu)\right]e^{i\check{\vartheta}(\lambda)} + \psi(x_\nu)\frac{\partial}{\partial\lambda}e^{i\check{\vartheta}(\lambda)} = \dot{x}_\nu\left(\frac{\partial}{\partial x_\nu} + i\Theta_\nu\right)\psi(x_\nu,\lambda) \quad (3.3.7)$$

$$\Theta^\mu = \frac{\partial\hat{\vartheta}(\lambda)}{\partial x^\mu}, \dot{x}^\mu = \frac{\partial x^\mu}{\partial\lambda} \qquad \Theta_\nu = \frac{\partial\check{\vartheta}(\lambda)}{\partial x_\nu}, \dot{x}_\nu = \frac{\partial x_\nu}{\partial\lambda} \quad (3.3.8)$$

where the $\hat{\vartheta}$ or $\check{\vartheta}$ is the Y^+ or Y^- superphase, respectively. Furthermore, when $\Theta = eA_\nu/\hbar$, this is known as *Gauge derivative* for an object with the electric charge *e* and the gauge field A_ν.

其中，$\hat{\vartheta}$ 或 $\check{\vartheta}$ 分别是 Y^+ 或 Y^- 宫位函数。此外，当 $\Theta = eA_\nu/\hbar$，这就是著名的规范场导数，这里 A_ν 被称为电荷 e 的规范场：

$$D_\nu \mapsto \partial_\nu + ieA_\nu/\hbar \qquad \Theta_\nu = eA_\nu/\hbar \quad (3.3.9)$$

$$D^\nu \mapsto \partial^\nu - ieA^\nu/\hbar \qquad \Theta^\mu = eA^\mu/\hbar \quad (3.3.10)$$

The above expressions can evoke the *Gauge* Invariance, seamlessly or effortlessly. However, the *Gauge* derivative can be classically “collapsed” to the covariant derivative:

上述表达式，轻而易举地无缝对接规范不变性。当然，规范导数也可以经典地“折叠”为协变导数：

$$\frac{\partial\psi}{\partial x^i}=\frac{\partial x^j}{\partial x^i}\frac{\partial\psi}{\partial x^j},\qquad \frac{\partial\psi}{\partial x_i}=\frac{\partial x^j}{\partial x_i}\frac{\partial\psi}{\partial x^j},\qquad \frac{\partial\phi}{\partial x_i}=\frac{\partial x_k}{\partial x_i}\frac{\partial\phi}{\partial x_k},\quad or\quad \frac{\partial\phi}{\partial x^i}=\frac{\partial x_k}{\partial x^i}\frac{\partial\phi}{\partial x_k}\qquad (3.3.11)$$

Therefore, the interpretations of the two approaches are fundamentally led to the different results: i) the superphase operations $D^\nu \mapsto \partial^\nu - ieA^\nu/\hbar$ or $D_\nu \mapsto \partial_\nu + ieA_\nu/\hbar$ of the ontological events; or ii) the classically “collapsed” states of a tangent vector onto the manifold's scalar space.

因此，对这两种方法的解释从根本上导致了不同的结果：i）本体事件的宫位操作 $D^\nu \mapsto \partial^\nu - ieA^\nu/\hbar$ 或 $D_\nu \mapsto \partial_\nu + ieA_\nu/\hbar$；或 ii）切向量在流形标量空间上的经典“折叠”状态。

Hypothetical Sciences - *Further development based upon the above Collapsed Physics* has resulted in the well-known *Special* and *General Relativity.* In the ontological regime, without a duality of manifolds and horizons of *Universal Topology*, however, both of these relativistic theories are collapsed at statically frozen or inanimate states. Therefore, over a century, our science has ingenuously generated numerous of paradoxes such as *Einstein* time travel, *Big Bang*, *Ever Expending Universe*, higher spatial dimensions of string hypothesis, etc.

遐想科学 - 基于上述塌缩物理学的逐步发展，产生了著名的狭义相对论和广义相对论。然而，在本体论领域，由于缺乏宇宙拓扑学的流形和层界的二象性原理，这两种相对论理论只能塌缩在无性静止和无生命状态的冻态，因此，一个多世纪以来，我们的科学天真地产生了许多悖论，如爱因斯坦时间旅行、大爆炸理论、不断膨胀的宇宙、超弦的高维度空间，等等。

Today, from a scientific perspective, the *Collapsed Physics* has been pushed to its classical limits, too much misfortune to mention, unable to account for the essences that lay beyond the reach of empirical experimentation, cut off from the intrinsic nature of matter and life in the universe, and struggling with the excessive hype of hypothetical sciences.

今天，从科学的角度来看，物理塌缩的经典理论已经被推到了极致，缪误举不胜举，而无法解释经验性实验所不能涉及的原理，脱离宇宙事态和生命内含的本质，无法摆脱人为假想性科学的过度炒作。

4. 世界方程 World Equations

Because the events are operated through the potential fields, it essentially incepts on the world planes a set of the event λ_i derivatives, giving rise to the horizon infrastructures. For any event operation (2.8.1) as the functional derivatives, the sum of terms are calculated at an initial state λ_0 and explicitly reflected by a series of the *Event Operations* $\lambda_i \in \left\{\dot{\partial}_{\lambda_1}, \dot{\partial}_{\lambda_2}\dot{\partial}_{\lambda_1}, \cdots, \dot{\partial}_{\lambda_n\lambda_{n-1}\cdots\lambda_1}\right\}$ in the dual variant forms：

在世界开源的核心层面上，由于任何事件都是通过势气场来运作的，其本性是激发一系列事件 λ_i 为导数的衍生态，从而产生了层界基础架构。任何事件 (2.8.1) 对于作为函数导数的运作，其整体项在初始状态 λ_0 下可以由一系列 $\lambda_i \in \left\{\dot{\partial}_{\lambda_1}, \dot{\partial}_{\lambda_2}\dot{\partial}_{\lambda_1}, \cdots, \dot{\partial}_{\lambda_n\lambda_{n-1}\cdots\lambda_1}\right\}$ 事件操作，以双变量形式来显式，其计算可以表明为如下方程式：

$$\hat{W}_n = \psi_n^+(\lambda, \hat{x})\psi_n^-(\lambda, \check{x}) \tag{3.4.1}$$

$$\psi_n^{\mp}(\lambda, x) = \left(1 \pm \tilde{\kappa}_1\dot{\partial}_{\lambda_1} \pm \tilde{\kappa}_2\dot{\partial}_{\lambda_2}\dot{\partial}_{\lambda_1} \ \cdots\right)\psi_n^{\mp}(\lambda, x)\,|_{\lambda=\lambda_0} \quad \because \psi_n^{\pm} \in \{\phi_n^{\pm}, \varphi_n^{\mp}\} \tag{3.4.2}$$

where $\psi_n^+(\lambda, \hat{x})$ or $\psi_n^-(\lambda, \check{x})$ is the virtual or physical potential of an object n, and $\hat{\kappa}_n$ is defined as the world constants. An integrity of the two functions above is, therefore, named as *First Type of World Equations*, because the function $\hat{W}_n$ represents that

其中，$\psi_n^+(\lambda, \hat{x})$ 或 $\psi_n^-(\lambda, \check{x})$是目标块 *n* 的虚态或实态势气场，$\hat{\kappa}_n$ 定义为世界常数。由此，命名这两个函数的整合方程为**第一类世界方程**，由此，函数 $\hat{W}_n$ 表达的是：

1. *The first two terms* $(1 \pm \kappa_1\dot{\partial}_{\lambda_1})$ *- The event drives both virtual and physical system and incepts from the world planes systematically breakup and extend into each of the manifolds.*

   前两项 $(1 \pm \kappa_1\dot{\partial}_{\lambda_1})$ - 事件同时驱动并开源激发虚态和物态系统，从世界平面，系统地分解和延伸到各个流形。

2. *The higher terms* $\pm(\kappa_2\dot{\partial}_{\lambda_2}\dot{\partial}_{\lambda_1} + \cdots\kappa_i\dot{\partial}_{\lambda_i}\dot{\partial}_{\lambda_{i-1}}\ldots\dot{\partial}_{\lambda_1})$ *- The event operations transcend further down to each of its sub-coordinate system with extra*

degrees of freedoms for either physical dimensions $\mathbf{r}(\lambda)$ *or virtual dimensions* $\mathbf{k}(\lambda)$*, reciprocally.*

高微分项 $\pm(\kappa_2\dot{\partial}_{\lambda_2}\dot{\partial}_{\lambda_1} + \cdots\kappa_i\dot{\partial}_{\lambda_i}\dot{\partial}_{\lambda_{i-1}}\ldots\dot{\partial}_{\lambda_1})$ - 事件操作进一步延伸到其每个子系统，赋予物理维度 $\mathbf{r}(\lambda)$ 或虚拟维度 $\mathbf{k}(\lambda)$ 附加额外的对偶自由度。

This *World Equation* $\hat{W}_n$ features the virtual supremacy for the processes of creations and annihilations.

这个世界方程 $\hat{W}_n$ 的特点是，由虚态主导的创造和湮灭过程。

Amazingly, the higher horizon reveals the principles of *Force Fields,* which include, but are not limited to, and are traditionally known as the *Spontaneous Breaking* and fundamental forces. For the physical observation, the amplitude $|\hat{W}_n|$ features the Y^- behaviors of the forces explicitly while the phase attributes the Y^+ comportment of the superphase actions implicitly.

令人惊讶的是，高层界揭示了力场的原理，传统上称为自发破缺力和其它基本力。在物理观测中，振幅 $|\hat{W}_n|$ 显性地反映了力的阴（Y^-）运动，而相位则隐性地反映了宫位作用的阳（Y^+）行为。

Once the physical three-dimensions are evolving or developed, the operational function $f(\lambda)$ for the event λ actions involves the local state densities $\rho_n(x)$ and its relativistic spacetime exposition of a system with N objects or particles. Assuming each of the $\phi_n^\pm$ objects is in one of three possible states: |-〉, |+〉, and |o〉, the system has N_n^+ and N_n^- objects at non-zero charges with their reciprocal state functions of $\varphi_n^\mp$ confineable to the respective manifold $Y^\pm$ locally. Therefore, the horizon functions of the system can be expressed by:

一旦形成物理三维演化后，事件 λ 运作函数 $f(\lambda)$ 就涉及到局域系统中具有 *N* 个物态或模块的状态密度 $\rho_n(x)$ 及其相对性时空的展现。假设，每个势气场 $\phi_n^\pm$ 模块都处于三种可能状态中的一种：|-〉、|+〉和 |o〉，系统中就出现了处于非零荷性的 N_n^+ 和 N_n^- 模块，它们互辅态函数的气势场 $\varphi_n^\mp$ 可以制约于各自阴阳（$Y^\pm$）流形的局域区，从而，系统的层界函数可以表示为：

$$\check{W}_a = f(\lambda)\rho_n, \qquad \check{W}_b = \sum\nolimits_n h_n \check{W}_a, \qquad \check{W}_c = k_w \int \check{W}_b d\Gamma \tag{3.4.3}$$

$$\rho_n = \psi_n^+(\hat{x})\psi_n^-(\check{x}) \qquad : \psi_n^\pm \in \{\phi_n^\pm, \varphi_n^\mp\} \qquad h_n = N_n^\pm / N \tag{3.4.4}$$

where h_n is a horizon factor, $N_n^\pm / N$ are percentages of the Y^-Y^+ objects, and k_w is defined as a world constant. During space and time dynamics, the density $\psi_n^-\psi_n^+$ is incepted at $\lambda = \lambda_0$ and followed by a sequence of the evolutions $\lambda_i \mapsto \dot{\partial}_{\lambda_1} \cdots \dot{\partial}_{\lambda_i \lambda_{i-1} \cdots \lambda_1}$ of the equation (2.8.1). As a horizon infrastructure, this process engages and applies a series of the event operations of equations (3.4.2) in the forms of the following expressions, expressions, named as *Second Type of World Equations*:

其中，h_n 是层界因子，$N_n^\pm / N$ 是阴阳（Y^-Y^+）模块的百分率，k_w 被定义为世界常数。在时空动态学中，密度 $\psi_n^-\psi_n^+$ 在 $\lambda = \lambda_0$ 处被激发开源，随后是 (2.8.1) 方程的一系列演化过程 $\lambda_i \mapsto \dot{\partial}_{\lambda_1} \cdots \dot{\partial}_{\lambda_i \lambda_{i-1} \cdots \lambda_1}$。作为层界基础结构，该过程应用 (3.4.2) 方程式的一系列事件操作，产生以下表达形式，称之为**第二类世界方程式**：

$$\check{W}^\pm = k_w \int d\Gamma \sum_n h_n \left(W_n^\pm + \kappa_1 \dot{\partial}_{\lambda_1} + \kappa_2 \dot{\partial}_{\lambda_2} \dot{\partial}_{\lambda_1} \cdots \right) \psi_n^\pm(\hat{x}) \psi_n^\mp(\check{x}) \tag{3.4.5}$$

where $\check{W}_n^\pm \equiv \check{W}(\hat{x} \,|\, \check{x}, \lambda_0)$ is the Y^+ or Y^- ground environment or an initial potential density of a system, respectively. This type of *World Equations* features the physical supremacy of kinetic dynamics or field equations as a part of the horizon infrastructure.

其中，$\check{W}_n^\pm \equiv \check{W}(\hat{x} \,|\, \check{x}, \lambda_0)$ 分别是系统的 阳Y^+或阴Y^-的基础环境，即初始势气场密度。作为层界基础结构的一个部分，这个类型的世界方程组的特点是以物态为主导的盛生或化归的场方程组。

Although, two types of the *World Equations* might be mathematically similar, they represents the real situations further favorable to a variety of variations for either virtual or physical supremacy. Generally, the first type is in the affirmative to the superphase evolutions whereas the second type is informative to the horizon evolutions.

尽管两类世界方程组在数学上可能是相似的，但它们代表了更有利于无论是虚态还是物态为主导下各种变化的现实情境。一般来说，第一种类型主要从属于虚态宫位调制性演化，而第二种类型是从属于实态层界性演化。

5. 极小运作 Least Operations

Least-Actions - As a natural principle of motion dynamics, one of the flow processes dominates the intrinsic order, or development, of virtual into physical regime, while, at the same time, its opponent dominates the intrinsic annihilation or physical resources into virtual domain. Applicable to the expressions of *World Equations* (3.4.1，3.4.5), the principle of least-actions derives a set of the *Motion Operations*, named as *Motion Equation of Yinyang Potentials* (derived in July 6th of 2015).

最小作用 - 作为动态学的一个自然运行原理，流数过程的一个方面协调着虚象状态到物数状态的内在次序或进化，同时，它的另一个互辅面支配着物态到虚拟状态的资源湮灭或化归。对于世界方程 (3.4.1，3.4.5) 表达式，可以适用于最小作用原理给出的一组如下运动操作方程，命名为**阴阳气势运行方程**（于2015年7月6日引入）

$$\check{\partial}^{-}\left(\frac{\partial W}{\partial(\hat{\partial}^{+}\phi^{+})}\right)-\frac{\partial W}{\partial\phi^{+}}=0 \qquad :\check{\partial}^{-}\in\{\check{\partial}_{\lambda},\check{\partial}^{\lambda}\},\ \phi^{+}\in\{\phi_{n}^{+},\varphi_{n}^{+}\} \qquad (3.5.1)$$

$$\hat{\partial}^{+}\left(\frac{\partial W}{\partial(\check{\partial}^{-}\phi^{-})}\right)-\frac{\partial W}{\partial\phi^{-}}=0 \qquad :\hat{\partial}^{+}\in\{\hat{\partial}^{\lambda},\hat{\partial}_{\lambda}\},\ \phi^{-}\in\{\phi_{n}^{-},\varphi_{n}^{-}\} \qquad (3.5.2)$$

This set of dual formulae extends the philosophical meaning to the *Euler-Lagrange Motion Equation* for the actions of any dynamic system, introduced in the 1750s. The new sets of the variables of $\phi_n^{\mp}$ and the event operators of $\check{\partial}^{-}$ and $\hat{\partial}^{+}$ signify that both manifolds maintain equilibria and formulations from each potential of the motion extrema, simultaneously driving a duality of physical and virtual dynamics.

这组二象性对偶公式将哲学意义，扩展到了19世纪50年代引入的任何动态系统作用的欧拉-拉格朗日定理运动方程，势气场 $\phi_n^{\mp}$ 的新变量集和事件变化 $\check{\partial}^{-}$ 和 $\hat{\partial}^{+}$ 的算符操作，阐明了，由各个运行极值中，导出保持二个流形平衡和动态的公式组，从而，拓展了物态和虚态的二象性势气运态学。

Geodesic Routing - Unlike a single manifold space, where the shortest curve connecting two points is described as a parallel line, the optimum route between two points of a curve is connected by the tangent transportations of the Y^- and Y^+ manifolds. As an extremum of event actions on a set of motion curves, the rate of divergence of nearby geodesics determines curvatures that is governed by the equivalent formulation of geodesic deviation for the shortest paths on each of the world planes, given in local coordinates by:

短程路由 - 在单流形空间中，连接两点的最短曲线被描述为一条平行线，然而，与单流形空间不同， 通过 Y^- 和 Y^+ 流形的的最佳路径是通过切线传输来连接两点之间的曲面，作为一组曲线上事件作用的极值，短程线附近的发散率决定了运行曲率，该曲率由各个世界平面上最短路径上短程变分的等效公式给出，在局域坐标中由以下公式表示：

$$\ddot{x}^\mu + \Gamma^{+\mu}_{\alpha\beta}\dot{x}^\alpha\dot{x}^\beta = 0 \qquad \ddot{x}_m + \Gamma^{-m}_{ab}\dot{x}_a\dot{x}_b = 0 \tag{3.5.3}$$

This set extends a duality to and is known as *YinYang Geodesic Equation*, where the motion accelerations of $\ddot{x}^\mu$ and $\ddot{x}_m$ are aligned in parallel to each of the world lines. It states that, during the inception of a universal regime, the tangent vector of the virtual Y^-Y^+ energies to the geodesic entanglements is either unchanged or parallel transport as an object moving along the world planes that creates the inertial transform generators and twist transport torsions to emerge a reality of the world.

这组公式扩展和定义了具有二象性的阴阳短程线方程，$\ddot{x}^\mu$ 和 $\ddot{x}_m$ 的加速度运动是平行于每一条世界线；应该进一步指出，在一个宇宙域诞生开源之初，短程线纠缠的虚态阴阳（Y^-Y^+）能量的切向量要么是不变的，要么是平行传输，就像沿着一个模块移动在世界平面上，产生惯性变换的激发子和螺旋传输的扭转矩，由此呈显现实世界。

6. 层界结构 Horizon Framework

As a part of the *Universal Topology*, a communication infrastructure formalizes the ontological processes in mathematical presentation driven by axiomatic creators and evolutions of the event operations that transform and transport informational messages and conveyable actions. Empowered with the speed of light, the *two-dimensional* $\{\mathbf{r} \mp i\mathbf{k}\}$ communication of the *World Planes* is naturally contracted for tunneling between the Y^- and Y^+ domains at both local residual and relativistic interaction among virtual dark and physical massive energies, which is mathematically describable by local invariances and relativistic commutations of entanglements cycling reciprocally and looping consistently among the four potential fields of the dual manifolds, illustrated in the following picture, introduced in December 2016.

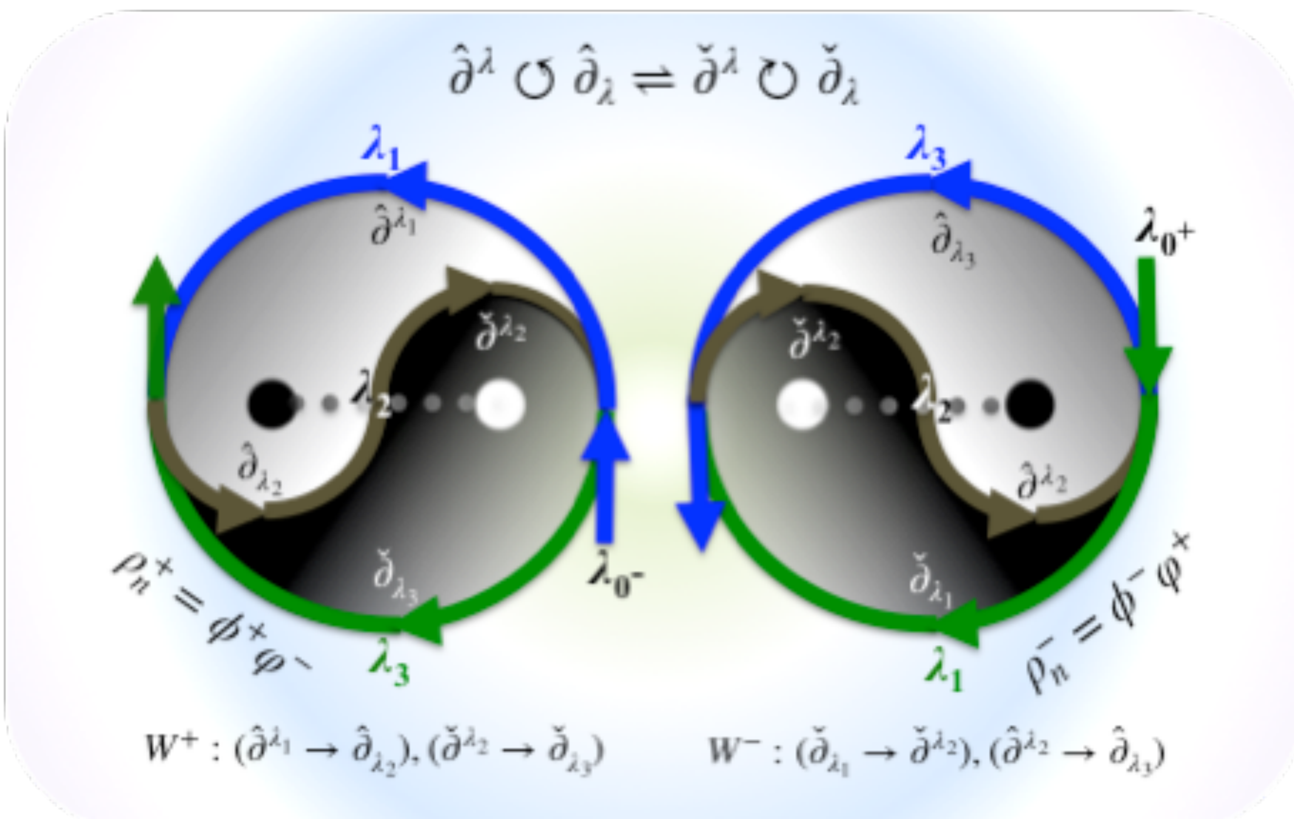


Figure 3.6.1: Processes of YinYang Events
图 *3.6.1:* 阴阳事件流程

作为宇宙拓扑的一个组成部分，显而易见，在创生事件运作驱动下，以利于对信息互换和传输的可传递操作，通信基础架构以数理形式形成公理化的本体性流程。借助光

速的优势，世界平面的二维 $\{\mathbf{r} \mp i\mathbf{k}\}$ 通讯自然地融通阴（Y^-）和阳（Y^+）区域之间的隧穿效应，实现虚态暗能量和物态显质量的局域不变性和跨域交互性的互动互辅作用，在数学上，可以用二象流形的四个势气场之间对偶循环和连贯环运的纠缠来描述，由图示（于2016年12月引入）.

When the event $\lambda \propto t$ operates at constant speed c, the Y^-Y^+ dynamics give rise to the second horizon of the world planes. Each world contracts a two-dimensional manifold, generates a pair of the boost and spiral transportations, and entangles an infinite loop between the Y^-Y^+ manifolds:

当事件 $\lambda \propto t$ 以恒定速度 c 运行时，Y^-Y^+ 动态流动就导致了世界平面的第二个层界，通过每个世界融通一个二维流形，就产生了一对幅度和相度运通激发子，从而，形成 Y^-Y^+ 流形之间一个无限循环的纠缠效应：

$$\hat{\partial}^{\lambda} \circlearrowleft \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \circlearrowright \check{\partial}_{\lambda} \qquad : x_m \in \{ict, \tilde{r}\},\ x^{\mu} \in \{-ict, \tilde{r}\} \qquad (3.6.1)$$

Remarkably, these environmental settings of originators and commutators establish entanglements between the manifolds as a duality of the Y^-Y^+ infrastructures for the life transformation, transportation, or commutation simultaneously and complementarily.

值得注意的是，这些动源和对易的环境，通过建立流形之间的纠缠效应，形成 Y^-Y^+ 基础架构的二象性，实现同步互补地转换、运通或对易的生态。

Residual Operations - In order to operate the local actions, an event λ exerts its effects of the virtual supremacy within its Y^+ manifold or physical supremacy within its Y^- manifold, simultaneously. Because of the local relativity, the derivative ∂^{λ} to the vector $x^{\nu}\mathbf{b}^{\nu}$, where $\mathbf{b}^{\nu}$ is the basis, has the changes of both magnitude quantity $\dot{x}^{\mu}(\partial x^{\nu}/\partial x^{\mu})\mathbf{b}^{\nu}$ and basis direction $\dot{x}^{\mu}x^{\nu}\overset{+}{\Gamma}_{\mu\nu a}\mathbf{b}^{\mu}$, where $\dot{x}^{\mu} = \partial x^{\mu}/\partial\lambda$, transforming between the coordinates of x^{ν} and x^{μ}, giving rise to the second horizon in its *Local* or *Residual* derivatives or relativities with the boost and spiral generators.

局域运作 - 为了实现局部运作，事件 λ 同时运作以虚阳性 Y^+ 流形为主和实阴性 Y^- 为主的流形效应。由于局域相对性，对矢量 $x^{\nu}\mathbf{b}^{\nu}$ 的导数 ∂^{λ} (这里$\mathbf{b}^{\nu}$为基矢) ，其量值

$\dot{x}^\mu(\partial x^\nu/\partial x^\mu)\mathbf{b}^\nu$ 和基方向 $\dot{x}^\mu x^\nu \overset{+}{\Gamma}_{\mu\nu a}\mathbf{b}^\mu$ 都发生了变化 (其中 $\dot{x}^\mu = \partial x^\mu/\partial\lambda$) ，从而，坐标 x^ν 和坐标 x^μ 之间也发生了变换，其结果是，局域驻区的相对性导数产生了第二个层界，形成了幅度和相度激发子。

$$\hat{\partial}^\lambda\psi = \dot{x}^\mu X^{\nu\mu}\left(\partial^\nu - i\Theta^\mu(\lambda)\right)\psi \qquad : X^{\nu\mu} = S_2^+ + R_2^+,\ S_2^+ = \frac{\partial x^\nu}{\partial x^\mu},\ R_2^+ = x^\mu \overset{+}{\Gamma}_{\nu\mu a} \quad (3.6.2)$$

Because the exogenous event λ has indirect effects via the local arguments of the potential function, the non-local derivative to the local event λ is not at zero.

由于，外来事件 λ 对势气函数的局域参数只有间接影响，对局部事件 λ 的非局部导数不为零。

Likewise, the Y^- actions can be cloned straightforwardly, which gives rise from the Y^- tangent rotations of both magnitude quantity $\dot{x}_n(\partial x_m/\partial x_n)\mathbf{b}_m$ and basis rotation $\dot{x}_n x_m \overset{-}{\Gamma}_{nm\alpha}\mathbf{b}_n$ into a vector Y^- potentials of the second horizon:

同样地，阴 Y^- 运作可以直接克隆，阴 Y^- 切旋转产生的量值 $\dot{x}_n(\partial x_m/\partial x_n)\mathbf{b}_m$ 和基旋 $\dot{x}_n x_m \overset{-}{\Gamma}_{nm\alpha}\mathbf{b}_n$ 的变化，就构建成第二层界的阴 Y^- 向量场：

$$\check{\partial}_\lambda\psi = \dot{x}_m X_{nm}\left(\partial_n + i\Theta_m(\lambda)\right)\psi \qquad : X_{nm} = S_2^- + R_2^-,\ S_2^- = \frac{\partial x_n}{\partial x_m},\ R_2^- = x_m \overset{-}{\Gamma}_{nma} \quad (3.6.3)$$

where the $\Gamma^-_{nm\alpha}$ or $\Gamma^+_{\nu\mu a}$ is an Y^- or Y^+ metric connection,

其中，$\Gamma^-_{nm\alpha}$ 或 $\Gamma^+_{\nu\mu a}$ 是一个 Y^- 或 Y^+ 度规连接矩阵，

$$\overset{+}{\Gamma}_{\nu\mu a} = \frac{1}{2}\left(\frac{\partial\hat{g}^{\nu\mu}}{\partial x^a} + \frac{\partial\hat{g}^{\nu a}}{\partial x^\mu} - \frac{\partial\hat{g}^{\mu a}}{\partial x^\nu}\right), \qquad \overset{-}{\Gamma}_{nm\alpha} = \frac{1}{2}\left(\frac{\partial\check{g}_{nm}}{\partial x_\alpha} + \frac{\partial\check{g}_{n\alpha}}{\partial x_m} - \frac{\partial\check{g}_{m\alpha}}{\partial x_n}\right) \qquad (3.6.4)$$

similar but extend the meanings to the *Christoffel* symbols of the *First* kind, introduced in 1869. The first partial derivative ∂^λ or ∂_λ acts on the potential argument's value x^μ or x_m with the exogenous event λ as indirect effects.

与1869年推出的第一种克里斯托菲尔符号相似，这里进一步延伸了该符号的二象性含义，阐明了一阶偏导数 ∂^λ 或 ∂_λ 对势气场变量 x^μ 或 x_m 在外来事件 λ 的作用下，所产生的间接效应。

Relativistic Operations - By lowering the index, the virtual Y^+ actions manifest the first tangent potential $\hat{\partial}_\lambda$ projecting into its opponent basis of the Y^- manifold. Because of the relativistic interactions, the derivative ∂_λ to the vector $x^\nu \mathbf{b}^\nu$ has the changes of both magnitude quantity $\dot{x}_a(\partial x^\nu / \partial x_a)\mathbf{b}^\nu$ and basis direction $\dot{x}^a x_\mu \overset{+}{\Gamma}{}^\nu_{\mu a} \mathbf{b}^\nu$, transforming from one world plane $W^+\{\mathbf{r} - i\mathbf{k}\}$ to the other $W^-\{\mathbf{r} + i\mathbf{k}\}$. This action redefines the Y^+ event quantities of relativity and creates the *Relativistic Boost* S_1^+ transformation and the interweave *Spiral* R_1^+ transportation around a central point, which gives rise from the Y^+ tangent rotations into a vector Y^- potentials for the second horizon.

相对运作 - 通过下降指数的操作，虚拟 Y^+ 运作产生出第一个切向量 $\hat{\partial}_\lambda$，投射到它对偶基的阴 Y^- 流形中，由于相对性的互辅作用，对矢量 $x^\nu \mathbf{b}^\nu$ 的导数 ∂_λ 所产生的效应，既有量值 $\dot{x}_a(\partial x^\nu / \partial x_a)\mathbf{b}^\nu$ 的相对变化，又有基方向 $\dot{x}^a x_\mu \overset{+}{\Gamma}{}^\nu_{\mu a} \mathbf{b}^\nu$ 的旋转变化，从而，完成了从一个世界平面 $W^+\{\mathbf{r} - i\mathbf{k}\}$ 向另一个世界平面 $W^-\{\mathbf{r} + i\mathbf{k}\}$ 转换。这个运作重新定义了 Y^+ 事件的相对性参量，产生了围绕中心点的相对性幅度 S_1^+ 变换和交互性相度 R_1^+ 传输，导致了从 Y^+ 阳切向旋转，产生了第二个层界的阴 Y^- 势气矢量。

$$\hat{\partial}_\lambda \psi = \dot{x}_a X^\nu{}_a \big(\partial^\nu - i\Theta^\nu(\lambda)\big)\psi \qquad : X^\nu{}_a = S_1^+ + R_1^+,\ S_1^+ = \frac{\partial x^\nu}{\partial x_a},\ R_1^+ = x^\mu \overset{+}{\Gamma}{}^\nu_{\mu a} \quad (3.6.5)$$

Similarly, one has the Y^- derivative relativistic to its Y^+ opponent:

同样地，我们也就有了阴 Y^- 导数作用于对偶阳 Y^+ 流形的相对性效应：

$$\check{\partial}^\lambda \psi = \dot{x}^\alpha X_m{}^\alpha \big(\partial_m + i\Theta_m(\lambda)\big)\psi \qquad : X_m{}^\alpha = S_1^- + R_1^-,\ S_1^- = \frac{\partial x_m}{\partial x^\alpha},\ R_1^- = x_s \overset{-}{\Gamma}{}^m_{s\alpha} \quad (3.6.6)$$

where the matrix $\check{g}_{\sigma\epsilon}$ or $\hat{g}^{se}$ is named as the local Y^- or Y^+ metric, and the matrix $\check{g}^{\sigma\epsilon}$ or $\hat{g}_{se}$ is named as the relativistic metric, respectively. Besides, the $\overset{-}{\Gamma}{}^m_{s\alpha}$ or $\overset{+}{\Gamma}{}^\nu_{\mu a}$ is further named as an Y^- or Y^+ metric connection,

其中，矩阵 $\check{g}_{\sigma\epsilon}$ 或 $\hat{g}^{se}$ 称之为阴 Y^- 或阳 Y^+ 的驻域度规，矩阵 $\check{g}^{\sigma\epsilon}$ 或 $\hat{g}_{se}$ 分别称之为阴 Y^-或阳 Y^+ 的相对度规。此外，$\overset{-}{\Gamma}{}^m_{s\alpha}$ 或 $\overset{+}{\Gamma}{}^\nu_{\mu a}$ 是一个阴 Y^- 或阳 Y^+ 的度规连接，

$$\Gamma^{+\nu}_{\mu a} = \frac{1}{2}\hat{g}_{\nu\epsilon}\left(\frac{\partial \hat{g}^{\epsilon\mu}}{\partial x^{a}} + \frac{\partial \hat{g}^{\epsilon a}}{\partial x^{\mu}} - \frac{\partial \hat{g}^{\mu a}}{\partial x^{\epsilon}}\right), \quad \Gamma^{-m}_{s\alpha} = \frac{1}{2}\check{g}^{me}\left(\frac{\partial \check{g}_{e\alpha}}{\partial x_{s}} + \frac{\partial \check{g}_{es}}{\partial x_{\alpha}} - \frac{\partial \check{g}_{\alpha s}}{\partial x_{e}}\right) \qquad (3.6.7)$$

similar but extend the meanings to the *Christoffel* symbols of the *Second* kind.

由此，它们类同并延伸了第二类克里斯托菲尔符号的象征意义。

7. 流数原理 Principles of Fluxion

For the entanglement streams between the manifolds, the ensemble of an event λ is in a mix of the Y^- or Y^+-supremacy states such that each pair of the reciprocal states $\{\phi_n^-, \varphi_n^+\}$ or $\{\phi_n^+, \varphi_n^-\}$ is performed in alignment with an integrity of their probability $p_n^\pm = p_n(h_n^\pm)$, where $h_n^\pm$ are the $Y^\pm$ distributive or horizon factors, respectively. The parameter p_n^- or p_n^+ is a statistical function of horizon factor $h_n^-(T)$ or $h_n^+(T)$, which forms the macroscopic density, described by the *Boltzmann* distribution, or the canonical ensemble expression (5.11.1).

对于流形间的纠缠流，事件 λ 的系综处于 Y^- 或 Y^+ 优势的整体混合状态中，使得每对势气态 $\{\phi_n^-, \varphi_n^+\}$ 或 $\{\phi_n^+, \varphi_n^-\}$ 的运行与其概率 $p_n^\pm = p_n(h_n^\pm)$ 完美地联系起来，其中 $h_n^\pm$ 分别是 $Y^\pm$ 分布因子或层界因子。参数 p_n^- 或 p_n^+ 是层界因子 $h_n^-(T)$ 或 $h_n^+(T)$ 的统计函数，其宏观密度由玻尔兹曼分布或正则系综表达式 (5.11.1) 描述。

Flux Continuity - Under the event operations, the interoperation among four types of scalar fields of $\phi_n^\pm$ and $\varphi_n^\pm$ correlates and entangles an environment of dual densities $\rho_\phi^+ = \phi_n^+\varphi_n^-$ and $\rho_\phi^-=\phi_n^-\varphi_n^+$ by means of the natural derivatives $\dot{\partial}$ to form and to define a pair of fluxions $\langle\dot{\partial}\rangle^\mp$:

流数连续性 - 在事件的操作下，四种标量场 $\phi_n^\pm$ 和 $\varphi_n^\pm$ 之间的互操作通过自然导数 $\dot{\partial}$ 关联并纠缠于一对双密度的 $\rho_\phi^+ = \phi_n^+\varphi_n^-$ 和 $\rho_\phi^-=\phi_n^-\varphi_n^+$ 环境，形成和定义为一对通量 $\langle\dot{\partial}\rangle^\mp$ 表示方式：

$$\dot{\partial}\rho_\phi^- = \langle\check{\partial},\hat{\partial}\rangle^- \equiv \langle\dot{\partial}\rangle^- \equiv \sum_n p_n^-\left(\varphi_n^+\check{\partial}\phi_n^- + \phi_n^-\hat{\partial}\varphi_n^+\right) \qquad (3.7.1)$$

$$\dot{\partial}\rho_\phi^+ = \langle\hat{\partial},\check{\partial}\rangle^+ \equiv \langle\dot{\partial}\rangle^+ \equiv \sum_n p_n^+\left(\varphi_n^-\hat{\partial}\phi_n^+ + \phi_n^+\check{\partial}\varphi_n^-\right) \qquad (3.7.2)$$

where $\dot{\partial} \in \{\check{\partial},\hat{\partial}\}$, $\check{\partial} \in \{\check{\partial}_\lambda, \check{\partial}^\lambda\}$ and $\hat{\partial} \in \{\hat{\partial}^\lambda, \hat{\partial}_\lambda\}$. The symbols $\langle\ \rangle^\mp$ are called 阴（Y^-） or 阳 （Y^+） *Continuity Bracket*. They represent the dual continuities of the Y^-Y^+ scalar densities, each of which extends and represents its meaning to the classic anti-commutator or commutator:

其中 $\dot{\partial} \in \{\check{\partial}, \hat{\partial}\}$、$\check{\partial} \in \{\check{\partial}_\lambda, \check{\partial}^\lambda\}$ 和 $\hat{\partial} \in \{\hat{\partial}^\lambda, \hat{\partial}_\lambda\}$。符号 $\langle\ \rangle^\mp$ 称之为阴（Y^-）或阳（Y^+）的连续性括符。它们代表了阴阳（Y^-Y^+）标量密度的二象连续性，每个标量密度的意义都扩展到了经典的反对易子或对易子表达方式：

$$\langle a, b\rangle = ab + ba, \qquad [a, b] = ab - ba \tag{3.7.3}$$

known *Lei Bracket*, introduced in 1930s.

即，类似于1930年推出的李氏括符。

Flux Commutation - In a parallel fashion, as another pair of the operational symbols $[\dot{\partial}]^\mp$ at respective Y^- or Y^+ supremacy, the reciprocal entanglements of fluxion fields define the *Commutator Bracket* $[\ ]^\mp$:

流数对易性 - 运用同理推演，作为另一对在各个 Y^- 或 Y^+ 优势上的操作符号 $[\dot{\partial}]^\mp$，流数场的对偶纠缠，定义了流数的**对易括符** $[\ ]^\mp$ 如下：

$$[\hat{\partial}, \check{\partial}]^+ = [\dot{\partial}]^+ \equiv \sum_n \left(p_n^+ \varphi_n^- \hat{\partial} \phi_n^+ - p_n^- \phi_n^+ \check{\partial} \varphi_n^-\right) \equiv \left\langle \dot{\partial}\right)_s^+ - \left(\dot{\partial}\right\rangle_s^+ \tag{3.7.4}$$

$$[\check{\partial}, \hat{\partial}]^- = [\dot{\partial}]^- \equiv \sum_n \left(p_n^- \varphi_n^+ \hat{\partial} \phi_n^- - p_n^+ \phi_n^- \hat{\partial} \varphi_n^+\right) \equiv \left\langle \dot{\partial}\right)_s^- - \left(\dot{\partial}\right\rangle_s^- \tag{3.7.5}$$

$$\left\langle \dot{\partial}\right)_s^\pm \equiv \sum_n p_n^\pm \varphi_n^\mp \dot{\partial} \phi_n^\pm, \qquad \left(\dot{\partial}\right\rangle_s^\pm \equiv \sum_n p_n^\mp \phi_n^\pm \dot{\partial} \varphi_n^\mp \tag{3.7.6}$$

where, in addition, the bracket $\langle\ )^\mp$ or $(\ \rangle^\mp$ are called Y^- or Y^+ *Asymmetry Brackets*. They are essential to ontological and cosmological dynamics.

另外，括号 $\langle\ )^\mp$ 或 $(\ \rangle^\mp$ 称为阴（Y^-）或阳（Y^+）**协称括号**。它们在本体论和宇宙动态学中是必不可少的符号参量。

Vector Fluxions - Similarly, a set of the reciprocal vector fields of $V_m^\pm = -\dot{\partial}\phi_m^\pm$ and $\Lambda_\mu^\pm \equiv -\dot{\partial}\varphi_\mu^\pm$, has the brackets of Y^- or Y^+ continuity and commutation:

向量流数 - 类似地，一组 $V_m^\pm = -\dot{\partial}\phi_m^\pm$ 和 $\Lambda_\mu^\pm \equiv -\dot{\partial}\varphi_\mu^\pm$ 的对偶向量场，具有阴（Y^-）或阳（Y^+）的连续性和交换性括符：

$$\langle\hat{\partial},\check{\partial}\rangle_v^{\pm} \equiv \sum\nolimits_n \left(p_n^{\pm}\varphi_n^{\mp}\hat{\partial}V_n^{\pm} + p_n^{\mp}\phi_n^{\pm}\check{\partial}\Lambda_n^{\mp}\right) = \left\langle\dot{\partial}\right)_v^{\pm} + \left(\dot{\partial}\right\rangle_v^{\pm} \tag{3.7.7}$$

$$[\hat{\partial},\check{\partial}]_v^{\mp} \equiv \sum\nolimits_n \left(p_n^{\mp}\varphi_n^{\pm}\hat{\partial}V_n^{\mp} - p_n^{\pm}\phi_n^{\mp}\check{\partial}\Lambda_n^{\pm}\right) = \left\langle\dot{\partial}\right)_v^{\pm} - \left(\dot{\partial}\right\rangle_v^{\pm} \tag{3.7.8}$$

$$\left\langle\dot{\partial}\right)_v^{\pm} \equiv p_n^{\pm}\varphi_n^{\mp}\dot{\partial}V_n^{\pm} \qquad \left(\dot{\partial}\right\rangle_v^{\pm} \equiv p_n^{\mp}\phi_n^{\pm}\dot{\partial}\Lambda_n^{\mp} \tag{3.7.9}$$

where the index *n* is corresponds to each type of objects, and v indicates entanglements of vector potentials, which respectively give rise to and balance with each other's horizon environment.

其中，索引 *n* 对应于每种对象的类型，v 表示向量势气场的纠缠参量，它们分别导致产生和平衡彼此的层界环境。

8. 第一宇宙场 First Universal Fields

The potential interweavement is a fundamental principle of the real-life streaming such that one constituent cannot be fully described without considering the other. As a consequence, the state of a composite system is always expressible as a sum of products of states of each constituents. Under the law of event operations, they are fully describable by the mathematical framework of the dual manifolds.

势气场交织是生态链流通的一个基本原则，必须同时考虑对偶相辅相成的组成部分才能获得完整的描述，所以，复合系统的状态总是可以表示为各组成部分状态的乘积之和。在事件运行法则下，它们可以用对偶流形的数学框架来充分地描述。

During the events of the virtual supremacy, a chain of the event actors in the loop flows of Figure 3.6.1 and *Universal Event* processes, $W^+ : (\hat{\partial}^{\lambda_1} \to \hat{\partial}_{\lambda_2}), (\check{\partial}^{\lambda_2} \to \check{\partial}_{\lambda_3})$, of equation (2.9.1) can be shown by the bi-directional event flows and underlined in the sequence of the dual processes:

在虚态主导一系列事件的运行中，图 3.6.1 循环流动中宇宙事件方程（2.9.1）的序例过程 $W^+ : (\hat{\partial}^{\lambda_1} \to \hat{\partial}_{\lambda_2}), (\check{\partial}^{\lambda_2} \to \check{\partial}_{\lambda_3})$，给出了双向事件流程，可以将事件参与链加下划线表示为：

$$\hat{W}^+ : (\hat{\partial}^{\lambda_1} \to \underline{\hat{\partial}_{\lambda_2}}), (\check{\partial}^{\lambda_2} \to \underline{\check{\partial}_{\lambda_3}}) \qquad \hat{W}^- : (\check{\partial}_{\lambda_1} \to \underbrace{\check{\partial}^{\lambda_2}}), (\hat{\partial}^{\lambda_2} \to \underbrace{\hat{\partial}_{\lambda_3}}) \tag{3.8.1}$$

From the event actors $\hat{\partial}_{\lambda_2}$ and $\check{\partial}_{\lambda_3}$, *Second Type of World Equations* (3.4.5) becomes:

由事件运行操作 $\hat{\partial}_{\lambda_2}$ 和 $\check{\partial}_{\lambda_3}$，将第二类世界方程组 (3.4.5) 转化成：

$$\hat{W}_a^+ = \left(W_n^+ + \kappa_1 \underline{\hat{\partial}_{\lambda_2}}\right) \phi_n^+ \varphi_n^- + \kappa_2 \underline{\check{\partial}_{\lambda_3}} \left(\phi_n^+ \hat{\partial}_{\lambda_2} \varphi_n^- + \varphi_n^- \hat{\partial}_{\lambda_2} \phi_n^+\right) \cdots \tag{3.8.2}$$

Meanwhile the event actors $\hat{\partial}^{\lambda_1}$ and $\check{\partial}^{\lambda_2}$ turn its reciprocal *World Equations* into:

同时，事件运行操作 $\hat{\partial}^{\lambda_1}$ 和 $\check{\partial}^{\lambda_2}$ 将其对偶的世界方程转化为：

$$\hat{W}_a^- = \left(W_n^- + \kappa_1 \underbrace{\check{\partial}^{\lambda_2}}\right)\phi_n^+\varphi_n^- + \kappa_2 \underbrace{\hat{\partial}_{\lambda_3}}\left(\phi_n^+\check{\partial}^{\lambda_2}\varphi_n^- + \varphi_n^-\check{\partial}^{\lambda_2}\phi_n^+\right)\cdots \quad (3.8.3)$$

where $W_n^{\pm} = W_n^{\pm}(\mathbf{r}, \lambda_0)$ is the time invariant Y^+Y^--energy area fluxion. Rising from the opponent fields of ϕ_n^+ or φ_n^-, the dynamic reactions under the Y^- manifold continuum give rise to *Motion Equation of Yinyang Potentials* (3.5.2) of the Y^+ ϕ_n^+ or Y^- φ_n^- fields approximated at the first and second orders of perturbations, named as *Second Type of World Equations*, resulting in the dual interruptive operations shown as below:

其中，$W_n^{\pm} = W_n^{\pm}(\mathbf{r}, \lambda_0)$ 是初时的阴阳能量的面积流。从 ϕ_n^+ 或 φ_n^- 的对偶场出发，Y^- 流形连续动态性的反应产生了 Y^+ 势场 ϕ_n^+ 或 Y^- 气场 φ_n^- 的阴阳气势运行方程 (3.5.2)，考虑趋近于一阶和二阶扰动，则有如下对偶性的互动运算结果，称为**第二类世界方程组**：

$$\frac{\partial \hat{W}_a^+}{\partial \varphi_n^-} = W_n^+\left(\mathbf{x}, \lambda_0\right)\phi_n^+ + \kappa_1\hat{\partial}_{\lambda_2}\phi_n^+ + \kappa_2\check{\partial}_{\lambda_3}\hat{\partial}_{\lambda_2}\phi_n^+ \quad (3.8.4)$$

$$\underbrace{\check{\partial}^{\lambda_2}}\left(\frac{\partial \hat{W}_a^+}{\partial(\underline{\hat{\partial}_{\lambda_2}}\varphi_n^-)}\right) = \left(\kappa_1 + \kappa_2\check{\partial}_{\lambda_3}\right)\check{\partial}^{\lambda_2}\phi_n^+ \quad (3.8.5)$$

$$\underbrace{\hat{\partial}_{\lambda_3}}\left(\frac{\partial \hat{W}_a^+}{\partial(\underline{\check{\partial}_{\lambda_3}}\varphi_n^-)}\right) = \hat{\partial}_{\lambda_3}\left(\kappa_2\hat{\partial}_{\lambda_2}\phi_n^+\right) \quad (3.8.6)$$

$$\frac{\partial \hat{W}_a^-}{\partial \phi_n^+} = W_n^-\left(\mathbf{x}, \lambda_0\right)\varphi_n^- + \kappa_1\check{\partial}^{\lambda_2}\varphi_n^- + \kappa_2\hat{\partial}_{\lambda_3}\check{\partial}^{\lambda_2}\varphi_n^- \quad (3.8.7)$$

$$\underline{\hat{\partial}_{\lambda_2}}\left(\frac{\partial \hat{W}_a^-}{\partial(\underbrace{\check{\partial}^{\lambda_2}}\phi_n^+)}\right) = \hat{\partial}_{\lambda_2}\left(\kappa_1 + \kappa_2\hat{\partial}_{\lambda_3}\right)\varphi_n^- \quad (3.8.8)$$

$$\underline{\check{\partial}_{\lambda_3}}\left(\frac{\partial \hat{W}_a^-}{\partial(\underbrace{\hat{\partial}_{\lambda_3}}\phi_n^+)}\right) = \check{\partial}_{\lambda_3}\left(\kappa_2\check{\partial}^{\lambda_2}\varphi_n^-\right) \quad (3.8.9)$$

where the primary potentials of $\hat{\partial}_{\lambda_2}\varphi_n^-$ and $\check{\partial}_{\lambda_3}\phi_n^+$ give rise simultaneously to their opponent's reactors of the physical to virtual $\check{\partial}^{\lambda}$ and the virtual to physical $\hat{\partial}_{\lambda}$

transformations, respectively. From these interwoven relationships, the motion operations determine a pair of partial differential equations of the $Y^{-}Y^{+}$ state fields ϕ_n^+ and φ_n^- under the supremacy of virtual dynamics at the $Y\{x^{\nu}\}$ manifold:

其中，源势气场 $\hat{\partial}_{\lambda_2}\varphi_n^-$ 和 $\check{\partial}_{\lambda_3}\phi_n^+$ 分别同时产生对偶的物态到虚态 $\check{\partial}^{\lambda}$ 和虚态到物态 $\hat{\partial}_{\lambda}$ 转换的连锁反应。从这些相互交织的关系中可以看出，在 $Y\{x^{\nu}\}$ 流形主导虚拟动态学的支配下，运行操作确定了在 $Y^{-}Y^{+}$ 状态场 ϕ_n^+ 和 φ_n^- 中的一对偏微分方程，：

$$\kappa_1\left(\check{\partial}^{\lambda_2}-\hat{\partial}_{\lambda_2}\right)\phi_n^+ + \kappa_2\left(\check{\partial}_{\lambda_3}\check{\partial}^{\lambda_2}+\hat{\partial}_{\lambda_3}\hat{\partial}_{\lambda_2}-\check{\partial}_{\lambda_3}\hat{\partial}_{\lambda_2}\right)\phi_n^+ = W_n^+\phi_n^+ \qquad (3.8.10a)$$

$$\kappa_1\left(\hat{\partial}_{\lambda_2}-\check{\partial}^{\lambda_2}\right)\varphi_n^- + \kappa_2\left(\hat{\partial}_{\lambda_3}\hat{\partial}_{\lambda_2}+\check{\partial}_{\lambda_3}\check{\partial}^{\lambda_2}-\hat{\partial}_{\lambda_3}\check{\partial}^{\lambda_2}\right)\varphi_n^- = W_n^-\varphi_n^- \qquad (3.8.10b)$$

giving rise to a pair of the Y^{+} *primacy fields* from each respective opponent during their physical interactions.

在它们的物态相互作用过程中，各对偶因子产生了一对 Y^{+} 阳优势气场。

In the events of the physical supremacy in parallel fashion, the dynamic reactions on *Second Type of World Equations* under the Y^{+} manifold continuum give rise to the motion operations of the Y^{-} state fields ϕ_n^-, which determine a pair of linear partial differential equations of the state function ϕ_n^- or φ_n^+ under the supremacy of physical dynamics at the $Y\{x_m\}$ manifold. From *Universal Event* processes, $W^{-}:(\check{\partial}_{\lambda_1}\rightarrow\check{\partial}^{\lambda_2}),(\hat{\partial}^{\lambda_2}\rightarrow\hat{\partial}_{\lambda_3})$, the equation (2.9.2) can be shown by and underlined in the sequence of the dual processes:

同样原理，在 Y^{+} 流形连续体下，对第二类世界方程的动态连锁反应，产生了阴 Y^{-} 状态势场 ϕ_n^- 的运行操作， 在实态优势的支配下，确定了 Y^{-} 状态势函数 ϕ_n^- 或 Y^{+} 状态气函数 φ_n^+ 的一对线性偏微分方程。在宇宙阴优事件 $W^{-}:(\check{\partial}_{\lambda_1}\rightarrow\check{\partial}^{\lambda_2}),(\hat{\partial}^{\lambda_2}\rightarrow\hat{\partial}_{\lambda_3})$ 的序例过程中，方程式 (2.9.2) 可以用对偶过程的顺序加下划线表示如下：

$$\check{W}^{-}:(\underline{\check{\partial}_{\lambda_1}}\rightarrow\check{\partial}^{\lambda_2}),(\underline{\hat{\partial}^{\lambda_2}}\rightarrow\hat{\partial}_{\lambda_3}) \qquad \check{W}^{+}:(\underbrace{\hat{\partial}^{\lambda_1}}\rightarrow\hat{\partial}_{\lambda_2}),(\underbrace{\check{\partial}^{\lambda_2}}\rightarrow\check{\partial}_{\lambda_3}) \qquad (3.8.11)$$

$$\check{W}_a^- = \left(W_n^- + \kappa_1\underline{\check{\partial}_{\lambda_1}}\right)\ \varphi_n^+\phi_n^- + \kappa_2\underline{\hat{\partial}^{\lambda_2}}\left(\varphi_n^+\check{\partial}_{\lambda_1}\phi_n^- + \phi_n^-\check{\partial}_{\lambda_1}\varphi_n^+\right)\cdots \qquad (3.8.12)$$

$$\check{W}_a^+ = \left(W_n^+ + \kappa_1\ \underbrace{\hat{\partial}^{\lambda_1}}\right)\phi_n^-\varphi_n^+ + \kappa_2\ \underbrace{\check{\partial}^{\lambda_2}}\left(\phi_n^-\hat{\partial}^{\lambda_1}\varphi_n^+ + \varphi_n^+\hat{\partial}^{\lambda_1}\phi_n^-\right)\cdots \qquad (3.8.13)$$

The motion operations (3.5.1) derives the equations similar to a set of (3.8.4-9) are shown as below:

运行操作 (3.5.1-2) 导出了类似于 (3.8.4-9) 的方程组集合，如下所示：

$$\frac{\partial \check{W}_a^-}{\partial \varphi_n^+} = W_n^-\left(\mathbf{x}, \lambda_0\right)\phi_n^- + \kappa_1 \check{\partial}_{\lambda_1}\phi_n^- + \kappa_2 \hat{\partial}^{\lambda_2}\check{\partial}_{\lambda_1}\phi_n^- \quad (3.8.14)$$

$$\underbrace{\hat{\partial}^{\lambda_1}}\left(\frac{\partial \check{W}_a^-}{\partial(\underline{\check{\partial}_{\lambda_1}}\varphi_n^+)}\right) = \left(\kappa_1 + \kappa_2 \hat{\partial}^{\lambda_2}\right)\hat{\partial}^{\lambda_1}\phi_n^- \quad (3.8.15)$$

$$\underbrace{\check{\partial}^{\lambda_2}}\left(\frac{\partial \check{W}_a^-}{\partial(\underline{\hat{\partial}^{\lambda_2}}\varphi_n^+)}\right) = \check{\partial}^{\lambda_2}\left(\kappa_2 \check{\partial}_{\lambda_1}\phi_n^-\right) \quad (3.8.16)$$

$$\frac{\partial \check{W}_a^+}{\partial \phi_n^-} = W_n^+\left(\mathbf{x}, \lambda_0\right)\varphi_n^+ + \kappa_1 \hat{\partial}^{\lambda_1}\varphi_n^+ + \kappa_2 \check{\partial}^{\lambda_2}\hat{\partial}^{\lambda_1}\varphi_n^+ \quad (3.8.17)$$

$$\underline{\check{\partial}_{\lambda_1}}\left(\frac{\partial \check{W}_a^+}{\partial(\underbrace{\hat{\partial}^{\lambda_1}}\phi_n^-)}\right) = \check{\partial}_{\lambda_1}\left(\kappa_1 + \kappa_2 \check{\partial}^{\lambda_2}\right)\varphi_n^+ \quad (3.8.18)$$

$$\underline{\hat{\partial}^{\lambda_2}}\left(\frac{\partial \check{W}_a^+}{\partial(\underbrace{\check{\partial}^{\lambda_2}}\phi_n^-)}\right) = \hat{\partial}^{\lambda_2}\left(\kappa_2 \hat{\partial}^{\lambda_1}\right)\varphi_n^+ \quad (3.8.19)$$

where the primary potentials of the local dynamics $\check{\partial}_{\lambda_1}$ and $\hat{\partial}^{\lambda_2}$ give rise simultaneously to their opponent's reactors of the virtual animation $\hat{\partial}^{\lambda_1}$ and the physical to virtual transformation $\check{\partial}^{\lambda_2}$, respectively. And vice versa.

其中，局域动态学的基础势气场 $\check{\partial}_{\lambda_1}$ 和 $\hat{\partial}^{\lambda_2}$ 分别同时产生对偶虚态反应 $\hat{\partial}^{\lambda_1}$ 和物态到虚态 $\check{\partial}^{\lambda_2}$ 的转换；反之亦然。

$$\kappa_1\left(\hat{\partial}^{\lambda_1} - \check{\partial}_{\lambda_1}\right)\phi_n^- + \kappa_2\left(\hat{\partial}^{\lambda_2}\hat{\partial}^{\lambda_1} + \check{\partial}^{\lambda_2}\check{\partial}_{\lambda_1} - \hat{\partial}^{\lambda_2}\check{\partial}_{\lambda_1}\right)\phi_n^- = W_n^-\phi_n^- \quad (3.8.20a)$$

$$\kappa_1\left(\check{\partial}_{\lambda_1} - \hat{\partial}^{\lambda_1}\right)\varphi_n^+ + \kappa_2\left(\check{\partial}^{\lambda_2}\check{\partial}_{\lambda_1} + \hat{\partial}^{\lambda_2}\hat{\partial}^{\lambda_1} - \check{\partial}^{\lambda_2}\hat{\partial}^{\lambda_1}\right)\varphi_n^+ = W_n^+\varphi_n^+ \quad (3.8.20b)$$

giving rise to the Y^- *primacy fields* from each of the respective opponents during their virtual interactions.

在它们的虚态相互作用过程中，各对偶因子产生了一对阴 Y^- 优势气场。

Together as a summary, the two pairs of four formulae (3.8.10) and (3.8.20) are derived and named as ***First Universal Field Equations.*** They are fundamental and general to all initial fields of natural horizon evolutions.

作为总结，我们导出和命名了两对**第一宇宙场方程** (3.8.10) 和 (3.8.20)，它们是最基本的势气场，普适于所有自然层界的初始演化过程。

9. 第二宇宙场 Second Universal Fields

In the global environment, the $Y^{-}Y^{+}$ virtual energies have their commutations at operational uniformity to maintain a duality of their equal primacy. From the density equations, the physical events simultaneously operate another dual state $\{\phi_n^+, \varphi_n^-\}$ and their movements, $\dot{\partial}_\lambda\left(\varphi_n^+\phi_n^-\right)$, that give rise to the Y^+ fluxions of continuity. The successive operations entangle the scalar potentials in fluxions streaming a set of the Y^+ *Universal Fields (3.8.10)* into a pair of the rearrangement:

在全域场境中，$Y^{-}Y^{+}$ 虚态能量在它们的交互操作上具有一致性，以保持它们对偶性的同等优势权。从密度方程出发，物态事件同时作用于另一对状态 $\{\phi_n^+, \varphi_n^-\}$ 及其它们的运行 $\dot{\partial}_\lambda\left(\varphi_n^+\phi_n^-\right)$，从而产生连续性阳 Y^+ 流数。连续性操作将流动中的标量势气纠缠在一起，将一组阳 Y^+ 宇宙场 (3.8.10) 流化重构为如下一对方程组：

$$\kappa_2\varphi_n^-\left(\hat{\partial}_{\lambda_3}\hat{\partial}_{\lambda_2}\right)\phi_n^+ = \varphi_n^- W_n^+\phi_n^+ - \kappa_1\varphi_n^-\left(\check{\partial}^{\lambda_2} - \hat{\partial}_{\lambda_2}\right)^+\phi_n^+ - \kappa_2\varphi_n^-\check{\partial}_{\lambda_3}\left(\check{\partial}^{\lambda_2} - \hat{\partial}_{\lambda_2}\right)\phi_n^+ \tag{3.9.1}$$

$$\begin{aligned}\kappa_2\phi_n^+\left(\check{\partial}^{\lambda_3}\check{\partial}^{\lambda_2}\right)\varphi_n^- = {} & \phi_n^+ W_n^-\varphi_n^- + \kappa_1\phi_n^+\left(\check{\partial}^{\lambda_2} - \hat{\partial}_{\lambda_2}\right)\varphi_n^- - \kappa_2\phi_n^+\left(\check{\partial}_{\lambda_3} - \hat{\partial}_{\lambda_2}\right)\check{\partial}^{\lambda_2}\varphi_n^- \\ & + \kappa_2\phi_n^+\left(\check{\partial}^{\lambda_3}\check{\partial}^{\lambda_2}\right)\varphi_n^- - \kappa_2\phi_n^+\left(\hat{\partial}_{\lambda_3}\hat{\partial}_{\lambda_2}\right)\varphi_n^-\end{aligned} \tag{3.9.2}$$

Add the above two equations together, we constitute a function of density continuity as the Y^+ fluxion in forms of the Y^+ symmetric formulation:

将上述两个方程加在一起，就构成了作为 Y^+ 流数的密度连续性方程，得到其阳 Y^+ 对称公式形式：

$$\dot{\partial}_\lambda \mathbf{f}_s^+ = \langle \hat{\partial}_\lambda\hat{\partial}_\lambda, \check{\partial}^\lambda\check{\partial}^\lambda \rangle_s^+ = \langle W_0^+ \rangle - \kappa_1\left[\check{\partial}^{\lambda_2} - \hat{\partial}_{\lambda_2}\right]_s^+ + \kappa_2\left\langle \check{\partial}_{\lambda_3}\left(\hat{\partial}_{\lambda_2} - \check{\partial}^{\lambda_2}\right)\right\rangle_s^+ + \mathbf{g}_a^-/\kappa_g^- \tag{3.9.3}$$

Representing a duality of the entangling environments as the dark flux continuity of the potential densities, a pair of potentials $\{\phi_n^+, \varphi_n^-\}$ is not only mapped the Y^+ fluxion to their symmetric commutation at second horizon and continuity at the third horizon, but also associated with an Y^- asymmetric accelerator $\mathbf{g}_a^-$.

对偶纠缠环境显现的是势气场密度的连续暗通量，这样，就把一对势气场 $\{\phi_n^+, \varphi_n^-\}$ 流，不仅，映射到它们在第二层界中的对称对易和第三层界中的连续性流数，而且，还与阴 Y^- 协称加速度 $\mathbf{g}_a^-$ 联系了起来。

In a parallel fashion, another dual state fields $\{\phi_n^-, \varphi_n^+\}$ in the dynamic equilibrium can be rewritten:

运用同理推演，另一个对偶状态场 $\{\phi_n^-, \varphi_n^+\}$ 的动态平衡方程，可以重写为：

$$\kappa_2 \varphi_n^+ \left(\hat{\partial}^{\lambda_2}\hat{\partial}^{\lambda_1}\right)\phi_n^- = \varphi_n^+ W_n^- \phi_n^- + \varphi_n^+ \kappa_1 \left(\check{\partial}_{\lambda_1} - \hat{\partial}^{\lambda_1}\right)\phi_n^- - \kappa_2 \left(\check{\partial}^{\lambda_2} - \hat{\partial}^{\lambda_2}\right)\check{\partial}_{\lambda_1}\phi_n^- \tag{3.9.4}$$

$$\kappa_2 \phi_n^- \left(\check{\partial}_{\lambda_2}\check{\partial}_{\lambda_1}\right)\varphi_n^+ = \phi_n^- W_n^+ \varphi_n^+ - \phi_n^- \kappa_1 \left(\check{\partial}_{\lambda_1} - \hat{\partial}^{\lambda_1}\right)\varphi_n^+ + \kappa_2 \check{\partial}^{\lambda_2}\left(\hat{\partial}^{\lambda_1} - \check{\partial}_{\lambda_1}\right)\varphi_n^+$$
$$+\kappa_2 \phi_n^- \left(\check{\partial}_{\lambda_2}\check{\partial}_{\lambda_1}\right)\varphi_n^+ - \kappa_2 \phi_n^- \left(\hat{\partial}^{\lambda_2}\hat{\partial}^{\lambda_1}\right)\varphi_n^+ \tag{3.9.5}$$

Adding the two formulae, we institute another function of the density continuity as the Y^- fluxion in forms of the Y^- general formulation:

把上面两个公式加之一起，我们就获得了另一对作为 Y^- 阴流动的密度连续方程，其普遍 Y^- 方程形式为：

$$\dot{\partial}_\lambda \mathbf{f}_s^- = \langle \check{\partial}_\lambda \check{\partial}_\lambda, \hat{\partial}^\lambda \hat{\partial}^\lambda \rangle_s^- = \langle W_0^- \rangle + \kappa_1 \left[\check{\partial}_{\lambda_1} - \hat{\partial}^{\lambda_1}\right]_s^- + \kappa_2 \left\langle \check{\partial}_{\lambda_1}\left(\hat{\partial}^{\lambda_2} - \check{\partial}^{\lambda_2}\right)\right\rangle_s^- + \mathbf{g}_a^+ / \kappa_g^+ \tag{3.9.6}$$

where $\mathbf{g}_a^+$ is an Y^+ asymmetric accelerator. The entangle bracket $\dot{\partial}_\lambda \mathbf{f}_s^- = \langle \check{\partial}_\lambda \check{\partial}_\lambda, \hat{\partial}^\lambda \hat{\partial}^\lambda \rangle_s^-$ of the general dynamics features a function of the Y^- continuity for their scalar potentials.

其中，$\mathbf{g}_a^+$ 是一个协对称加速度。一般动态学中的纠缠括符 $\dot{\partial}_\lambda \mathbf{f}_s^- = \langle \check{\partial}_\lambda \check{\partial}_\lambda, \hat{\partial}^\lambda \hat{\partial}^\lambda \rangle_s^-$ 表述为标量势气的阴 Y^- 连续性方程。

Consequently, driving the field dynamics at the second horizons, a system of N objects aggregates into fluxion domain associated with continuity at the second horizon developing the density commutation into the third horizon. These processes represent a set of the universal laws, shown as the following,

因此，在第二层界驱动的动态场景下，一个 *N* 模块系统聚集成流数域而形成第二层界相关的连续性，再将其密度的对易运动发展到第三层界。这些过程阐明了一组宇宙法则，如下所示，

1. *Incepted in the virtual world, the events not only generate its opponent reactions but also create and conduct the real-life objects in the physical world, because any element embeds the bidirectional reactions $\hat{\partial}_\lambda$ and $\check{\partial}^\lambda$ entangling between the Y^-Y^+ manifolds, symmetrically and asymmetrically.*

   开源于虚态世界中，由于任何元素嵌入了阴阳（Y^-Y^+）流形之间的纠缠，形成对称和协称的双向 $\hat{\partial}_\lambda$ 和 $\check{\partial}^\lambda$ 相对互动效应，虚态事件不仅能产生对偶的共鸣反应，而且在物态世界中创造和引导现实生态的目标块。

2. *Initiated in the physical world，Eq. (3.9.6)，the events have to leave a life copy of its mirrored images in the virtual world without an intrusive effect into the virtual world, because the asymmetric element doesn't have the reaction $\hat{\partial}_\lambda$ to the Y^- manifold. In other words, the virtual world is aware of and immune to the physical world.*

   源于物态世界，方程 *(3.9.6)* 中，因为协称元素对 Y^- 流形没有 $\hat{\partial}_\lambda$ 反应项，任何事件必须在虚态世界中留下生活镜像的副本，而不会对虚态世界产生侵入性影响。换言之，虚态世界可以了解物态世界的活动内容，且不受物态世界的影响。

3. *The fluxions are developed or operated by the symmetric commutative dynamics $[\ ]^\pm$ that give rise to the flux continuity $\langle\ \rangle^\pm$ of the next horizon and associate the accelerators $\mathbf{g}_a^\pm$ asymmetrically.*

   这些流数是由对称对易 $[\ ]^\pm$ 的动态发展或操作下形成的，由此产生了下一个层界的通量连续性 $\langle\ \rangle^\pm$，并于加速 $\mathbf{g}_a^\pm$ 协称运动关联了起来。

Because the virtual resources are massless, the accelerator might appear as if it were nothing or at zero resources $\mathbf{g}_a^+ \mapsto 0^+$, unlike the $\mathbf{g}_a^-$ as a physical accelerator. The Y^- or Y^+ supremacy of the flux continuity operates the symmetric commutation and continuity internally as well as the asymmetric acceleration of the system observable externally.

与物态加速度 $\mathbf{g}_a^-$ 不一样，因为虚态资源是没有质量的，所以其加速度 $\mathbf{g}_a^+ \mapsto 0^+$ 可能看起来好像什么都没有，或者资源似乎为零。以阴（Y^-）为优气或阳（Y^+）为优势场的互辅流数连续性，操作着系统的对称对易、内在连续性、以及协称加速度。

Together as a summary, the two pairs of four formulae (3.9.3) and (3.9.6) are derived and named as ***Second Universal Field Equations.*** They are fundamental and general to the flux fields of natural horizon evolutions, symmetrically.

作为总结，我们导出和命名了一对**第二宇宙场方程** (3.9.3) 和 (3.9.6)，它们是最基本的势气流数的对称场，普适于自然层界的流数演化过程。

10. 第三宇宙场 Third Universal Fields

As the twin, a pair of the above Y^- and Y^+ symmetric scalar or vector fields accompanies and generalizes asymmetric dynamics. Integrating commutation of fluxions with second universal field equations, we arrive at *Third Universal Field Equations*:

作为前者的孪生，上述的一对 Y^-Y^+ 对称标量场或矢量场伴随着产生了具有一组普遍性协称动态学的原理，整合流数的对易性与第二个宇宙场方程组，我们也同时获得**第三宇宙场方程**：

$$\mathbf{g}_a^-/\kappa_g^- = \left[\check{\partial}^\lambda\check{\partial}^\lambda, \hat{\partial}_\lambda\hat{\partial}_\lambda\right]_x^+ + \zeta^+ \qquad : \zeta^+ = \left(\hat{\partial}_{\lambda_2}\check{\partial}^{\lambda_2} - \hat{\partial}_{\lambda_2}\check{\partial}_{\lambda_3}\right\rangle^+ \tag{3.10.1}$$

$$\mathbf{g}_a^+/\kappa_g^+ = \left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right]_x^- + \zeta^- \qquad : \zeta^- = \left(\check{\partial}^{\lambda_2}\hat{\partial}^{\lambda_1} - \hat{\partial}^{\lambda_2}\check{\partial}_{\lambda_1}\right\rangle^- \tag{3.10.2}$$

$$\left[\check{\partial}^\lambda\check{\partial}^\lambda, \hat{\partial}_\lambda\hat{\partial}_\lambda\right]_x^+ \equiv \left[\check{\partial}^\lambda\check{\partial}^\lambda, \hat{\partial}_\lambda\hat{\partial}_\lambda\right] : \{\phi_n^+, \varphi_n^-\} \tag{3.10.3}$$

$$\left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right]_x^- \equiv \left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right] : \{\phi_n^-, \varphi_n^+\} \tag{3.10.4}$$

where the index x refers to either of the scalar or vector potential and the symbol [ ] is a commutator of *Lie* bracket. Named as the *General Asymmetric Equations*, introduced at 2:00am September 3rd 2017 *Washington, DC* USA, the general formulae are balanced by and operated as a pair of commutations of the asymmetric Y^-Y^+ entanglers $\zeta^\mp$ that constitutes the laws of asymmetric conservations universal to all types of Y^-Y^+ interactive motions, curvatures, dynamics, forces, accelerations, transformations, and transportations on the world lines of the dual manifolds.

其中，索引 x 是指标量或矢量势气场，括符 [ ] 是流通对易运动的符号，称为**普遍协称方程**。这组通用公式是于2017年9月3日凌晨2:00在美国华盛顿特区获得，她由一对 Y^-Y^+ 协称纠缠态 $\zeta^\mp$ 的对易来进行平衡和操作，在对偶流形的世界线上，这组对易因子构成了所有类型的 Y^-Y^+ 相互作用的运动、曲率、动态、力、加速度，变换和传输的普遍协称守恒定律。

Apparently, a force is represented as and given by an asymmetric accelerator. Since the physical world is riding on the world planes where the virtual world is primary and dominant, the acceleration at a constant rate in universe has its special meaning different from the spacetime manifold, where the physical world is primary. Mathematically when $\mathbf{g}_a^{\pm} = 0$, the above formulae can develop further applications without the potential movements, because they are canceled out from the equations of *Second Universal Fields*. Therefore, connected seamlessly to *Riemannian* geometry, they are essential to our cosmology of the universe.

显然，力是由一个协称的加速度来表示和描述，由于物态世界是在以虚态世界为优势的世界平面上运行的，宇宙中匀速加速有其特殊意义，不同于时空流形中以实态世界为优势的物质加速度。从数学上讲，当 $\mathbf{g}_a^{\pm} = 0$ 时，由于上述公式被从第二宇宙方程中取消了，可以在没有潜在运动的情况下进一步发展应用，因此，它们与黎曼几何学无缝连接，对我们的宇宙学至关重要。

Harnessed with the *Philosophy of Nature*, *Universal Topology*, *Mathematical Framework* and *Universal Field Equations* are discovered scientifically and comprehensively. Together as a summary, the two pairs of four formulae (3.10.1-2) are derived and named as ***Third Universal Field Equations.*** They are fundamental and general to the commutative fields of higher-horizon evolutions, symmetrically. Therefore, a broad range of applications to both classical and contemporary physics prevails throughout the rest of the chapters.

运用自然哲学，我们从科学上完整地开发了宇宙拓扑，数学框架和宇宙场方程组。作为总结，我们导出和命名了两对**第三宇宙场方程** (3.10.1-2)，它们是最基本的势气流数的协称场，普适于高级层界的对易过程。由此，对经典物理学和当代物理学都有广泛的应用，将在余下的章节中进行阐述。

11. 神秘的势气场 Secret of Potential Fields

Since the evolutionary processes of the mass inauguration is between the second and third horizons, the scalar fields of potentials are massless instances under the virtual supremacy dominant at the first and second horizons. In addition, the scalar potentials are the gauge fields, operated interactively by the superphase modulation and subjected to the event actions. Conceivably and strikingly, unique characteristics of the scalar fields behaves or known as Dark Energy, which reveals astonishingly Natural Secret of Potential Fields.

在第一层界和第二层界的虚态优势下，标量势气场是无质量的事例，所以，质量开源是在第二到第三层界之间的演化过程。此外，标量势气场是规范场，由宫位宫位进行调制和互动，从属于事件运行。值得注意的是，标量场惊人地揭示了势气场的自然秘密， 表现出被称为暗能量的独到特性。

能量子理论 Energon Theory

Chapter 4 第 4 篇

In this chapter, the previous contexts are unfolded into further details to testify empirically how and why the *Infrastructure of Universe* can prevail numerous of groundbreakings over our contemporary quantum physics and declare promoting *Quantum Physics into Ontological Energon (Generator) Theory* as a part of *Universal and Unified Field Theory*.

在这一章中，前面的内容被展开到更进一步的细节中，用经验理论来证明宇宙基础架构是如何和为什么能够超越我们当代量子物理学的众多突破，作为宇宙统一场理论的一个部分，宣告将量子物理学提升到本体能量子（激发子）理论。

As a part of the *Universal Topology*, a communication infrastructure formalizes the ontological processes in mathematical presentation driven by axiomatic creators and evolutions of the event operations that transform and transport informational messages and conveyable actions. Empowered with the speed of light, the *two-dimensional* $\{\mathbf{r} \mp i\mathbf{k}\}$ communication of the *World Planes* is naturally contracted or operated for tunneling between the Y^- and Y^+ domains at both local residual and relativistic interaction among virtual dark and physical massive energies, which is mathematically describable by local invariances and relativistic commutations of entanglements cycling reciprocally and looping consistently among the *Quadrant-States* of potential fields of the dual manifolds.

作为宇宙拓扑的一个组成部分，显而易见，在创生的事件运行驱动下，通信基础架构以数理形式形成公理化的本体性流程，以利于对信息互换和传输的可传递操作。借助光速的优势，世界平面的二维 $\{\mathbf{r} \mp i\mathbf{k}\}$ 通讯自然地融通阴（Y^-）和阳（Y^+）区域之间的隧穿效应，实现虚态暗能量和物态显质量的局域不变性和跨域交互性的互动互辅作用，在数学上，可以用二象流形的四个势气场之间对偶循环和连贯环运的纠缠来描述。

1. 激发子 Generators

In the infrastructure of the universe, it consists of a set of constituents, named as *Generators or Energons*, which are a group of the irreducible foundational matrices and constructs a variety of the applications in forms of horizon evolution, fields and forces. At the second horizon *SU*(2), a set of the boost and spiral generators institutes the infrastructure of ecological movement $\hat{\partial}^{\lambda} \circlearrowleft \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \circlearrowright \check{\partial}_{\lambda}$ with a set of the metric signatures, local originators, and horizon commutators. At the third horizon *SU*(3) or higher, a set of the *Lorentz Generators* institutes the infrastructure of spacetime, featuring thermal, symmetric, asymmetric and transformational dynamics.

在宇宙基础架构中，它由一组不可约的基本矩阵组成，称之为激发子或能量子，它们以层界演化、场和力构成各种形式的运用体，在第二层界 *SU*(2) 处，有一组幅度和相度激发子建立了生态运动 $\hat{\partial}^{\lambda} \circlearrowleft \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \circlearrowright \check{\partial}_{\lambda}$ 的基础架构，具有度规特征、本地开源体和层界对易机制。在第三层界 *SU*(3) 或更高层界，一组洛伦兹激发子构成了时空的基础架构，具有热动力、对称动力、协称动力和转换动态学等特点。

Remarkably, the superphase modulation conducts laws of evolutions and horizon of conservations, and maintains field entanglements of coupling weak and strong forces compliant to quantum electrodynamics of classic physics.

引人注目地的是，宫位位调制主导着演化法则和层界守恒，维持着弱和强耦合力的纠缠场，与经典物理的量子电动力学相一致。

The actions of Y^{+} supremacy represent one of the important principles of natural governances - *Law of Conservation of Virtual Creation and Annihilation*. The Y^{-} parallel entanglement represents another essential principle of natural behaviors - *Law of Conservation of Physical Animation and Reproduction*.

阳 Y^{+} 优势代表了自然运行的一些重要原理：虚态创生与湮灭的守恒定律。与之平行的 阴 Y^{-} 优势纠缠代表了自然规律的另一个极其重要原理：物态盛生和繁衍的守恒定律。

Both manifolds $\hat{x}\{\mathbf{r} - i\mathbf{k}\}$ and $\check{x}\{\mathbf{r} + i\mathbf{k}\}$ simultaneously govern and alternatively perform the event operations as one integral stream of any physical and virtual dynamics. Apparently, the virtual positions $\pm i\mathbf{k}$ naturally forms a duality of the conjugate manifolds: $x^\nu \in \hat{x}\{\mathbf{r} - i\mathbf{k}\}$ and $x_m \in \check{x}\{\mathbf{r} + i\mathbf{k}\}$. Each of the super two-dimensional coordinate system $G(\lambda) \in G\{\mathbf{r} \pm i\mathbf{k}\}$ constitutes its *World Plane* $W^- \in G(\lambda = t)$ or $W^+ \in G(\lambda = t)$ distinctively, forms a duality of the universal topology $W^\mp = P \pm iV$ cohesively, and maintains its own sub-coordinate system $\mathbf{r}$ or $\mathbf{k}$ extendable, respectively. A sub-coordinate system has its own rotational freedom of either physical sub-dimensions $\mathbf{r}(\theta, \varphi)$ or virtual sub-dimensions $\mathbf{k}(x^0, \cdots)$. Together, they compose two rotational manifolds as a reciprocal or conjugate duality operating and balancing the world events.

流形 $\hat{x}\{\mathbf{r} - i\mathbf{k}\}$ 和 $\check{x}\{\mathbf{r} + i\mathbf{k}\}$ 同时作为任何物理和虚拟动态的一个整体流来管理和交替执行事件操作。显然，虚位置 $\pm i\mathbf{k}$ 自然地形成了共轭流形的对偶：$x^\nu \in \hat{x}\{\mathbf{r} - i\mathbf{k}\}$ 和 $x_m \in \check{x}\{\mathbf{r} + i\mathbf{k}\}$。每一个超二维坐标系 $G(\lambda) \in G\{\mathbf{r} \pm i\mathbf{k}\}$ 分别构成其世界平面 $W^- \in G(\lambda = t)$ 或 $W^+ \in G(\lambda = t)$，凝聚形成一个普适拓扑 $W^\mp = P \pm iV$ 的对偶性，并分别保持自己的子坐标系 $\mathbf{r}$ 或 $\mathbf{k}$ 并可扩展。子坐标系有其自身的旋转自由度，可以是物态子维度 $\mathbf{r}(\theta, \varphi)$ 或虚拟子维度 $\mathbf{k}(x^0, \cdots)$。它们共同构成两个旋转流形，作为一个相互或共轭的对偶操作和平衡世界事件。

2. 幅度激发子 Boost Generators

On the world planes at a constant speed *c*, the $\lambda = t$ event flow naturally describes and concisely derives a set of the *Boost* matrix tables as the *Quadrant-State*:

在恒定速度 *c* 的世界平面上，事件 $\lambda = t$ 流自然地描述并简明地导出一组作为四象-状态的幅度矩阵表：

$$S_2^+ = \frac{\partial x^\nu}{\partial x^m} = \begin{pmatrix} 1 & -i \\ i & 1 \end{pmatrix} \equiv s_0 + is_2 \qquad : \hat{\partial}^\lambda = \dot{x}^m S_2^+ \partial^\nu \tag{4.2.1}$$

$$S_1^+ = \frac{\partial x^\nu}{\partial x_m} = \begin{pmatrix} -1 & -i \\ -i & 1 \end{pmatrix} \equiv s_3 - is_1 \qquad : \hat{\partial}_\lambda = \dot{x}_m S_1^+ \partial^\nu \tag{4.2.2}$$

$$S_1^- = \frac{\partial x_m}{\partial x^\nu} = \begin{pmatrix} -1 & i \\ i & 1 \end{pmatrix} \equiv s_3 + is_1 \qquad : \check{\partial}^\lambda = \dot{x}^\nu S_1^- \partial_m \tag{4.2.3}$$

$$S_2^- = \frac{\partial x_m}{\partial x_\nu} = \begin{pmatrix} 1 & i \\ -i & 1 \end{pmatrix} \equiv s_0 - is_2 \qquad : \check{\partial}_\lambda = \dot{x}_\nu S_2^- \partial_m \tag{4.2.4}$$

The $S_1^\pm$ matrices are a duality of the horizon settings for transformation between the two-dimensional world planes. The $S_2^\pm$ matrices are the local or residual settings for Y^- or Y^+ boost transportation within their own manifold, respectively. Defined as the *Infrastructural Boost Generators*, this s_κ group consists of the four distinct members, shown by the following:

矩阵 $S_1^\pm$ 分别描述了二维世界平面之间阴阳交换变换的一个二象对偶的层界幅度环境，矩阵 $S_2^\pm$ 分别描述了阴 Y^- 或阳 Y^+ 在自身流形内幅度运通的局域或驻域动态环境。定义为基础构架的幅度激发子，由集 s_κ 的四个成员组成，如下所示：

$$s_\kappa = \left[\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}_0, \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}_1, \begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}_2, \begin{pmatrix} -1 & 0 \\ 0 & 1 \end{pmatrix}_3 \right] \tag{4.2.5}$$

Intuitively simplified to a group of the 2x2 matrices, the infinite (3.6.1) loops of entanglements compose an integrity of the boost generators s_n that represents a law of conservation of life-cycle transform continuity of motion dynamics, shown by the following:

由此，直观明了地简化为一组 2x2 矩阵，无限纠缠环 (3.6.1) 构成了幅度激发子 s_n 的完善性，阐明了运行动态学中，生命周期变换和连续性的一个守恒定律，如下所示：

$$[s_a, s_b] = 2\varepsilon^-_{cba} s_c \qquad \langle s_a, s_b \rangle = 0 \qquad : a, b, c \in \{1,2,3\} \tag{4.2.6}$$

where the *Levi-Civet* connection ε^-_{cba} represents the right-hand chiral. In accordance with our anticipation of mathematic philosophy, the non-zero commutation reveals the loop-processes of entanglements, reciprocally. The zero continuity illustrates the conservations of virtual supremacy virtually that are either extensible from or degradable back to the global two-dimensions of the world planes at the horizon with or without physical mass.

其中，Levi-Civet 连接 ε^-_{cba} 表征右手旋性。正如我们哲理学所期望的，非零对易揭示了纠缠的循环过程。连续性为零表明了虚态优势的守恒性，它可以在二维全域世界平面上扩展或退化到具有或没有物质的层界中。

Apparently, the *Infrastructural Generators* can contract alternative matrices that might extend to the near physical topology. Among them, one popular set and its characteristics are shown as the following:

显然，基础设施的生成器可以融通到接近物理拓扑的可扩展矩阵。其中有一个集合形成了如下 所示的著名特性，：

$$\sigma_\kappa = \left[\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}_0, \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}_1, \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix}_2, \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}_3 \right] = [s_0,\ s_1,\ is_2, -s_3] \tag{4.2.7}$$

$$\sigma_0 = s_0 \qquad \sigma_1 = s_1 \qquad \sigma_2 = is_2 \qquad \sigma_3 = -s_3 \qquad \sigma_n^2 = I \tag{4.2.8}$$

$$[\sigma_a, \sigma_b]^- = 2i\varepsilon^-_{cba}\sigma_c \qquad [\sigma_a, \sigma_b]^+ = 0 \quad : a, b, c \in (1,2,3) \tag{4.2.9}$$

Therefore, we have fully derived *Pauli* spin matrices, introduced in 1925. In this classic al definition, the residual spinors $S_2^{\pm}$ are extended into the physical states toward the interpretations for the decoherence into a manifold of the four-dimensional spacetime-coordinates as a physical reality.

由此，我们完整地推导出了泡利自旋矩阵，它是于1925年引入的，在这个经典定义中，驻域自旋矩阵 $S_2^{\pm}$ 被扩展到物理态，来解释物理现实中退相干到一个四维时空坐标系的流形。

3. 相度激发子 Spiral Generators

Simultaneously on the world planes at a constant speed c, the loop event naturally describes and concisely elaborates another set of the *Spiral* matrix tables. The world planes are supernatural or intrinsic at the two-dimensional coordinates presentable as a vector calculus in polar coordinates. Because of the superphase modulation, in *Cartesian* coordinates all *Christoffel* symbols vanish, which implies the superphase modulation becomes hidden. Therefore, we consider the polar manifold $\{\tilde{r}, \pm i\tilde{\vartheta}\} \in \mathscr{R}^2$ that a physical world has its superposition $\tilde{r}$ superposed with the virtual world through the superphase $\tilde{\vartheta}$ coordinate:

同时，在以恒定速度 *c* 的世界平面上，循环链事件自然地描述并简洁阐明了另一组相度矩阵表。在二维坐标系中，世界平面是超自然的或内涵的，可以由极坐标系向量进行演算。由于宫位位调制，在笛卡尔坐标系中，所有的克里斯托菲尔符号都消失了，这意味着宫位位调制变得隐涵起来。因此，我们考虑一个物理世界具有其超位 $\tilde{r}$ 通过宫位 $\tilde{\vartheta}$ 坐标叠放在虚态世界上的极坐标 $\{\tilde{r}, \pm i\tilde{\vartheta}\} \in \mathscr{R}^2$ 流形：

$$ds^2 = (d\tilde{r} + i\tilde{r}d\tilde{\vartheta})(d\tilde{r} - i\tilde{r}d\tilde{\vartheta}) = d\tilde{r}^2 + \tilde{r}^2 d\tilde{\vartheta}^2 \qquad (4.3.1a)$$

$$: x_m \in \check{x}\{\tilde{r}, +i\tilde{\vartheta}\},\ x^\nu \in \hat{x}\{\tilde{r}, -i\tilde{\vartheta}\} \qquad (4.3.1b)$$

Therefore, the relationship of the metric tensor and inverse metric components is given straightforwardly by the following

由此而然，度规和逆度规张量分量的关系由下式直接给出

$$\check{g}_{\nu\mu} = \hat{g}^{\nu\mu} = \begin{pmatrix} 1 & 0 \\ 0 & \tilde{r}^2 \end{pmatrix}, \qquad \check{g}^{\nu\mu} = \hat{g}_{\nu\mu} = \begin{pmatrix} 1 & 0 \\ 0 & \tilde{r}^{-2} \end{pmatrix} \qquad (4.3.2)$$

where $\check{g}_{\nu\mu} \in Y^-$, and $\hat{g}^{\nu\mu} \in Y^+$. Normally, the coordinate basis vectors $\mathbf{b}_{\tilde{r}}$ and $\mathbf{b}_{\tilde{\vartheta}}$ are not orthonormal. Since the only nonzero derivative of a covariant metric component is $\check{g}_{\tilde{\vartheta}\tilde{\vartheta},\tilde{r}} = 2\tilde{r}$, the toques in *Christoffel* symbols for polar coordinates are simplified to and become as a set of *Quadrant-State* matrices,

其中，$\breve{g}_{\nu\mu} \in Y^-$ 和 $\hat{g}^{\nu\mu} \in Y^+$。通常，坐标基向量 $\mathbf{b}_{\tilde{r}}$ 和 $\mathbf{b}_{\tilde{\vartheta}}$ 不是正交的。由于协变度规分量的唯一非零导数是 $\breve{g}_{\tilde{\vartheta}\tilde{\vartheta},\tilde{r}} = 2\tilde{r}$，极坐标系的克里斯托菲尔符号中的扭矩被简化为一组四象状态矩阵，

$$R_2^+ = x^\mu \Gamma^+_{\nu\mu a} = x^\mu \begin{pmatrix} 0 & \tilde{r} \\ \tilde{r} & -\tilde{r} \end{pmatrix} \equiv \tilde{r}^2 \epsilon_0 + i\epsilon_2 \tilde{r}\tilde{\vartheta} \qquad : \hat{\partial}^\lambda = \dot{x}^m R_2^+ \partial^\nu \tag{4.3.3}$$

$$R_1^+ = x^\mu \Gamma^{+\nu}_{\mu a} = x^\mu \begin{pmatrix} 0 & 1/\tilde{r} \\ 1/\tilde{r} & -\tilde{r} \end{pmatrix} \equiv \tilde{r}^2 \epsilon_3 - i\epsilon_1 \tilde{r}\tilde{\vartheta} \qquad : \hat{\partial}_\lambda = \dot{x}_m R_1^+ \partial^\nu \tag{4.3.4}$$

$$R_1^- = x_s \Gamma^{-m}_{s\alpha} = x_s \begin{pmatrix} 0 & 1/\tilde{r} \\ 1/\tilde{r} & -\tilde{r} \end{pmatrix} \equiv \tilde{r}^2 \epsilon_3 + i\epsilon_1 \tilde{r}\tilde{\vartheta} \qquad : \breve{\partial}^\lambda = \dot{x}^\nu R_1^- \partial_m \tag{4.3.5}$$

$$R_2^- = x_m \Gamma^-_{nma} = x_m \begin{pmatrix} 0 & \tilde{r} \\ \tilde{r} & -\tilde{r} \end{pmatrix} \equiv \tilde{r}^2 \epsilon_0 - i\epsilon_2 \tilde{r}\tilde{\vartheta} \qquad : \breve{\partial}_\lambda = \dot{x}_\nu R_2^- \partial_m \tag{4.3.6}$$

The $R_1^\pm$ matrices are a duality of the interactive settings for entangling between the two-dimensional world planes. The $R_2^\pm$ matrices are the residual settings for Y^- and Y^+ spiral transportation within their own manifold, respectively. Defined as a set of the *Infrastructural Torque Generators*, this ϵ_κ group consists of the four distinct members, featured as the following:

矩阵 $R_1^\pm$ 分别描述了二维世界平面之间阴阳交互纠缠的一个二象对偶的层界相度环境，矩阵 $R_2^\pm$ 分别描述了阴 Y^- 或阳 Y^+ 在自身流形内相度运通的局域或驻域动态环境。定义为一组基础结构的相度激发子，由集 ϵ_κ 的四个成员组成，其特征如下：

$$\epsilon_\kappa = \left[\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}_0, \begin{pmatrix} 0 & 0 \\ 0 & -1 \end{pmatrix}_1, \begin{pmatrix} 0 & 0 \\ 0 & 1 \end{pmatrix}_2, \frac{1}{\tilde{r}^2} \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}_3 \right] \tag{4.3.7}$$

As a group of the 2x2 matrices, the infinite (4.3.3-6) loops of entanglements institute an integrity of the spiral generators ϵ_n sourced by the transport generators ϵ_0 that represents another law of conservation of life-cycle transform continuity of motion dynamics, shown by the following:

由此，作为一组 2x2 的矩阵，无限纠缠环 (4.3.3-6) 构成了由传输激发子 ϵ_0 开源的相度激发子 ϵ_n 的完善性，阐明了运行动态学中，生命周期变换和连续性的另一个守恒定律，如下所示：

$$[\varepsilon_2, \varepsilon_1] = 0 = [\varepsilon_1, \varepsilon_0] \quad \text{: Independent Freedom 独立自主} \tag{4.3.8}$$

$$[\varepsilon_2, \varepsilon_3] = \frac{1}{\tilde{r}^2} s_2 = [\varepsilon_3, \varepsilon_1] \quad \text{: Source of Force Exposions 曝力开源} \tag{4.3.9}$$

$$[\varepsilon_2, \varepsilon_0] = s_2 = [\varepsilon_0, \varepsilon_1] \quad \text{: Commutation Invariance 对易不变} \tag{4.3.10}$$

In accordance with our anticipation of mathematical philosophy, the above commutations between manifolds reveals that

正如我们哲理学所预期的，流形之间的上述交换揭示了

1. *Double loop entanglements are invariant and yield local independency, respectively.*

   双环纠缠具有不变性，并遵守局域独立自主性。

2. *Conservations of transportations are operated at the superposed world planes.*

   世界平面上的操作是运通守恒的

3. *Spiral commutations generate the s_2 spinor to maintain its torsion conservation.*

   相度对易激发 s_2 的自旋，遵守其扭矩守恒。

4. *Commutative generators exert its physical contortion at inverse r^2-dependent.*

   对易激发子产生了物态扭曲作用，且与 r^2 成反比。

Besides, the continuity of life-cycle transportations has the characteristics of

此外，生态周期运行的连续性，具有如下特性：

$$\langle \varepsilon_3, \varepsilon_0 \rangle = \frac{2}{\tilde{r}^2} s_0 \qquad \langle \varepsilon_2, \varepsilon_1 \rangle = 2\varepsilon_1 \tag{4.3.11}$$

$$\langle \varepsilon_2, \varepsilon_3 \rangle = \varepsilon_3 = -\langle \varepsilon_3, \varepsilon_1 \rangle \qquad \langle \varepsilon_2, \varepsilon_0 \rangle = \varepsilon_0 = -\langle \varepsilon_0, \varepsilon_1 \rangle \tag{4.3.12}$$

It demonstrates the commutative principles among the torque generators，show as the following:

它演示了扭矩激发子之间的对易性原理如下：

1. *The entire torque is sourced from the inception of the transformation* s_0 *and the physical contorsion* ε_3*; and*

   整个扭矩开源于运通变换 s_0 和物理扭曲 ε_3；并且

2. *Each of the physical or virtual torsion is driven by the real force* ε_3 *or superposing torsion* ε_0*, respectively.*

   每一个物态或虚态的扭矩分别是由实力 ε_3 或超引扭转 ε_0 所驱动。

Similar to the boost generators, the double streaming torques orchestrate a set of the four-status.

与幅度激发子类似，双流转矩协调的也是四种状态的一组集。

it is both of the commutations and continuity of life-cycle transportations that imply the forces are generated and to be appeared in the form of a rotational central-singularity once the extra freedoms are acquired at the next horizon.

正是这些生命周期运输的对易转型和连续性，隐含着一旦在下一个层界获得额外自由度后，力的形成就会以具有旋转中心为奇异点的形式出现。

4. 超引扭矩守恒 Conservation of Superposed Torsion

At the constant speed, the divergences of the torsion tensors are illustrated by the following:

在恒定速度下，各个扭转张量的发散性，如下图所示：

$$\nabla \cdot R_2^- = \frac{1}{\tilde{r}}\frac{\partial}{\partial \tilde{r}}\left(\epsilon_0 \tilde{r}^2\right) - \frac{i}{\tilde{r}}\frac{\partial}{\partial \tilde{\vartheta}}\left(\epsilon_2 \tilde{r}\tilde{\vartheta}\right) = 2\epsilon_0 - i\epsilon_2 \tag{4.4.1}$$

$$\nabla \cdot R_1^- = \frac{1}{\tilde{r}}\frac{\partial}{\partial \tilde{r}}\left(\epsilon_3 \tilde{r}^2\right) + \frac{i}{\tilde{r}}\frac{\partial}{\partial \tilde{\vartheta}}\left(\epsilon_1 \tilde{r}\tilde{\vartheta}\right) = i\epsilon_1 \tag{4.4.2}$$

Because of the Y^-Y^+ reciprocity, each superphase $\tilde{\vartheta}$ is paired at its mirroring spiral opponent. Remarkably, on the world planes at $\tilde{r}=0$, the total of each Y^-Y^+ torsion derivatives is entangling without singularity, yields invariance, and preserve conservations, introduced at 8:17 July 17 of 2018 and shown as the following.

由于 Y^-Y^+ 互辅作用，每个宫位 $\tilde{\vartheta}$ 具有其镜像相度的对偶。值得注意的是，在 $\tilde{r}=0$ 的世界平面上，每一个 Y^-Y^+ 扭转导数的总和都没有奇异性，遵守不变性，保持守恒性，于2018年7月17日8:17引入，示范如下：

$$Y^- : \nabla \cdot (R_1^- + R_2^-) = 2\begin{pmatrix} 0 & 1 \\ 1 & -i \end{pmatrix} \tag{4.4.3}$$

$$Y^+ : \nabla \cdot (R_1^+ + R_2^+) = 2\begin{pmatrix} 0 & 1 \\ 1 & +i \end{pmatrix} \tag{4.4.4}$$

known as the law of *Conservation of Superposed Torsion* on the World Planes, it implies that the transportations of the spiral torques between the virtual and physical worlds are

在世界平面上，这就是著名的叠加扭矩守恒法则，它意味着虚态世界和实态世界之间的相度扭矩的传输，具有如下特点：

1. *Modulated by the superphase $2\tilde{\vartheta}$-chirality, bi-directionally,*

   由双向宫位 $2\tilde{\vartheta}$-手性所调制，

2. *Operated at independence of spatial $\tilde{r}$-coordinate, respectively,*
   分别在空间 $\tilde{r}$-坐标下独立运行，
3. *Streaming with its residual and opponent, commutatively, and*
   具有驻留和对耦的对易流动性，
4. *Entangling a duality of the reciprocal spirals, simultaneously.*
   对偶相度的二象性同步纠缠，以及
5. *Divergences of the torsion tensors yield the law of conservations.*
   扭转张量的发散通量遵循守恒法则。

This virtual-supremacy of nature features the world planes a principle of *Superphase Ontology*, which, for examples, operates a macroscopic galaxy or blackhole system, generates a microscopic spinor of particle system, etc.

这种自然的虚态优势是以宫位本体论的原理作为世界平面的特征，例如，贯穿于操作宏观星系，操作黑洞系统，生成微观自旋的粒子系统，等等。

这就是杨振宁和李政道在1956年发现的所谓宇称“不守恒”现象，事实上，她完美地展显了宇称守恒定律的阴阳二象性。

5. 伽马和恺矩阵 Gamma and Chi Matrices

Aligning to the topological comprehension, we extend the gamma-matrix γ^ν, introduced by *W. K. Clifford* in the 1870s, to chi-matrix χ^ν for physical coordinates.

结合拓扑学的内涵，我们对1870年代由 W.K.Clifford 引入的伽马-矩阵 γ^ν 进行了扩展，引入了物态坐标系的恺-矩阵 χ^ν。

$$\zeta^\nu = \gamma^\nu + \chi^\nu \qquad \zeta_\nu = \gamma_\nu + \chi_\nu \tag{4.5.1}$$

$$\gamma^\nu = \left[\begin{pmatrix}\sigma_0 & 0\\ 0 & -\sigma_0\end{pmatrix}_0, \begin{pmatrix}0 & \sigma_1\\ -\sigma_1 & 0\end{pmatrix}_1, \begin{pmatrix}0 & \sigma_2\\ -\sigma_2 & 0\end{pmatrix}_2, \begin{pmatrix}0 & \sigma_3\\ -\sigma_3 & 0\end{pmatrix}_3\right] \tag{4.5.2}$$

$$\chi^\nu = \left[\begin{pmatrix}\varsigma_0 & 0\\ 0 & -\varepsilon_0\end{pmatrix}_0, \begin{pmatrix}0 & \varsigma_1\\ -\varsigma_1 & 0\end{pmatrix}_1, \begin{pmatrix}0 & \varsigma_2\\ -\varsigma_2 & 0\end{pmatrix}_2, \begin{pmatrix}0 & \varsigma_3\\ -\varsigma_3 & 0\end{pmatrix}_3\right] \tag{4.5.3}$$

$$\varsigma_0 = \tilde{r}^2\epsilon_0 \qquad \varsigma_1 = \tilde{r}\tilde{\vartheta}\epsilon_1 \qquad \varsigma_2 = i\tilde{r}\tilde{\vartheta}\epsilon_2 \qquad \varsigma_3 = \tilde{r}^2\epsilon_3 \tag{4.5.4}$$

Evolving into the third horizon, the superphase $\mathrm{d}\vartheta$ of polar coordinates is also extends into the circumference-freedom of sphere coordinates.

随着极坐标演化到第三层域，宫位 $\mathrm{d}\vartheta$ 也将圆周自由度扩展到球坐标。

$$\mathrm{d}\vartheta^2 = (\mathrm{d}\theta + i\sin\theta\,\mathrm{d}\phi)(\mathrm{d}\theta - i\sin\theta\,\mathrm{d}\phi) \mapsto \mathrm{d}\theta^2 + \sin^2\theta\,\mathrm{d}\phi^2$$
$$\therefore \mathrm{d}\vartheta \mapsto \mathrm{d}\theta \pm i\sin\theta\,\mathrm{d}\phi \tag{4.5.5}$$

Similar to *Pauli* matrices, the gamma γ^ν and chi χ^ν matrices are further degenerated into a spacetime manifold of the physical reality. To collapse the Y^- or Y^+ local states together, we have a duality of the states expressed by or degenerated to the formulae of event operations:

与泡利矩阵类似，伽马 γ^ν 和恺 χ^ν 矩阵进一步退化（展开）为物理现实的时空流形。由事件操作公式表述或蜕变为二象性状态的对偶性，从而，将 Y^- 或 Y^+ 局域状态折叠在一起：

$$\breve{\partial} = \check{\partial}_\lambda + \hat{\partial}_\lambda = \dot{x}_\nu\zeta_\nu D_\nu = \dot{x}_\nu\ \zeta_\nu\left(\partial_\nu + i\frac{e}{\hbar}A_\nu + \tilde{\kappa_2}\partial_\nu A_\mu + \cdots\right) \tag{4.5.6}$$

$$\hat{\partial} = \hat{\partial}^{\lambda} + \check{\partial}^{\lambda} = \dot{x}^{\mu}\zeta^{\mu}D^{\mu} = \dot{x}^{\mu}\zeta^{\mu}\left(\partial^{\mu} - i\frac{e}{\hbar}A^{\mu} - \tilde{\kappa}_2^{+}\partial^{\mu}A^{\nu} - \cdots\right) \tag{4.5.7}$$

Accordingly, all terms have a pair of the irreducible and complex quantities that preserves the full invariant and streams a duality of the Y^{-} and Y^{+} loop $\hat{\partial}^{\lambda} \hookrightarrow \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \hookleftarrow \check{\partial}_{\lambda}$ entanglements.

由此，所有的项都有一对不可约的复数量，它们保持了完整的不变性，流通着 Y^{-} 和 Y^{+} 循环 $\hat{\partial}^{\lambda} \hookrightarrow \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \hookleftarrow \check{\partial}_{\lambda}$ 纠缠的对偶性。

6. 量子场方程 Quantum Field Equations

At the first horizon, the individual behaviors of objects are characterized by their timestate functions of ϕ_n^+ or ϕ_n^- in the world W_a equations. Due to the natural superphase modulation of virtual and physical coexistences, the fields appear as quantization in mathematics.

在第一层界上，各个目标块的行为由其在世界 W_a 方程中势气 ϕ_n^+ 或 ϕ_n^- 的时间状态函数来表征，鉴于虚实共存的自然宫位调制特性，目标场在数学上表现为量子化。

Under a steady $W_n^\pm$ environment of the energy fluxions, the equations (3.8.10) can be reformulated into the compact forms for the Y^+ supremacy of the entanglements, defined as the Y^+ *Quantum Field Equations*:

在能量流数的稳定 $W_n^\pm$ 环境下，可以将方程 (3.8.10) 转化为 Y^+ 阳纠缠优势的紧凑形式，定义为：**阳量子场方程**，

$$\frac{-\hbar^2}{2E_n^+}\hat{\partial}_\lambda\hat{\partial}_\lambda\phi_n^+ - \frac{\hbar}{2}\left(\hat{\partial}_\lambda - \check{\partial}^\lambda\right)\phi_n^+ + \frac{\hbar^2}{2E_n^+}\check{\partial}_\lambda\left(\hat{\partial}_\lambda - \check{\partial}^\lambda\right)\phi_n^+ = \frac{W_n^+}{c^2}\phi_n^+ \tag{4.6.1}$$

$$\frac{\hbar^2}{2E_n^-}\check{\partial}^\lambda\check{\partial}^\lambda\varphi_n^- - \frac{\hbar}{2}\left(\check{\partial}^\lambda - \hat{\partial}_\lambda\right)\varphi_n^- + \frac{\hbar^2}{2E_n^-}\left(\check{\partial}_\lambda - \hat{\partial}_\lambda\right)\check{\partial}^\lambda\varphi_n^- = \frac{W_n^-}{c^2}\varphi_n^- \tag{4.6.2}$$

$$\kappa_1 = \hbar c^2/2 \quad \kappa_2 = \pm(\hbar c)^2/(2E_n^\mp) \quad W_n^\pm = c^2E_n^\pm \qquad E_n^\mp = \pm imc^2\ (\hbar\omega \rightleftharpoons mc^2) \tag{4.6.3}$$

where $E_n^\pm$ is a state of a virtual energon or a physical particle, given by equation (2.2.1). This pair of the fields emerges that the bi-directional transformation has two rotations one with left-handed $\phi_n^+ \mapsto \phi_n^L$ acting from the Y^+ source to the Y^- manifold, and the other right-handed $\varphi_n^- \mapsto \phi_n^R$ reacting from the Y^- back to the Y^+ manifold. Both fields are alternating into one another under a parity operation with relativistic preservation.

其中，$E_n^\pm$ 是虚态对耦物态子的一种能量子状态，由方程式 (2.2.1) 给出。这对场显示出双向变换有两个旋转，一个是左手性 $\phi_n^+ \mapsto \phi_n^L$，由 Y^+ 源作用到 Y^- 流形，另一个是右

手性 $\varphi_n^- \mapsto \phi_n^R$，由 Y^- 源反作用到 Y^+ 流形。在保留相对性的奇偶运作下，两个场相互交融。

The entanglement of Y^+-supremacy represents one of the important principles of natural governances - ***Law of Horizon Conservation of Virtual Creation and Annihilation***:

阳 Y^+ 优势的纠缠阐明了自然规律的一些重要原理 - 虚态创生和毁灭的层界守恒法则：

1. *The operational action $\hat{\partial}^\lambda$ of virtual supremacy results in the physical effects as the parallel and reciprocal reactions or emanations $\check{\partial}_\lambda$ in the physical world;*

   虚态优势的运作行为 $\hat{\partial}^\lambda$ 导致了物态世界中对耦的平行反应，即，粒子流 $\check{\partial}_\lambda$ 的物理效应；

2. *The virtual world transports the effects $\hat{\partial}_\lambda\hat{\partial}_\lambda$ emerging into or appearing as the creations of the physical world, even though the bi-directional transformations seamlessly balanced between the commutative operations of $\hat{\partial}_\lambda$ and $\check{\partial}^\lambda$; and*

   尽管双向转换在 $\hat{\partial}_\lambda$ 和 $\check{\partial}^\lambda$ 的对易操作之间看起来似乎是平衡无缝地，虚态世界运通 $\hat{\partial}_\lambda\hat{\partial}_\lambda$ 效应的结果，产生和显现的是物态世界的创生过程。

3. *As a part of the reciprocal processes, the physical world transports the reactive effects $\check{\partial}^\lambda\check{\partial}_\lambda$ concealing back or disappearing as annihilation processes of virtual world.*

   并且，作为对偶过程的一个部分，物态世界运通应变效应 $\check{\partial}^\lambda\check{\partial}_\lambda$，表征了虚态世界的化归或消失的湮灭过程。

As a set of the universal laws, the events incepted in the virtual world not only generate its opponent reactions but also create the real-life objects in the physical world. The obvious examples are the formations of the elementary particles that

在一系列宇宙规律中，虚态世界发生的事件不仅会产生对耦的反应，而且会在物理世界中产生真实的物体。最明显的例子，就是基本粒子的形成：

a) *The antiparticles in a virtual world generate the physical particles through their opponent duality of the event operations;*

虚态世界中的反粒子，通过其事件操作的对偶二象性，生成物态粒子；

b) *By carrying and transitioning the informational messages, particles and antiparticles grow into real-life objects vividly in a physical world and maintain their living entanglement;*

在物理世界中，通过携带和传递信息性消息，粒子和反粒子生动地成长为真实的物体，并维持它们生态纠缠；

c) *Recycling objects of a physical world as one of continuity processes for virtual-life streaming.*

利用回收物态世界中的资源是作为虚态生命流的连续过程之一。

As a reciprocal process, another pair of the equations (3.8.20) simultaneously is reformulated into the following compact components for the Y^- supremacy of entanglements: *the Y^- Quantum Field Equations*：

作为一个互易对偶的过程，另一对方程 (3.8.20) 同时为 Y^- 优势的纠缠，制备了以下紧凑形式：**阴量子场方程**，

$$\frac{\hbar^2}{2E_n^-}\check{\partial}^\lambda\check{\partial}_\lambda\phi_n^- - \frac{\hbar}{2}\left(1+\frac{\hbar}{E_n^-}\hat{\partial}^\lambda\right)\left(\check{\partial}_\lambda - \hat{\partial}^\lambda\right)\phi_n^- = \frac{W_n^-}{c^2}\phi_n^- \quad (4.6.4)$$

$$\frac{-\hbar^2}{2E_n^+}\hat{\partial}^\lambda\hat{\partial}^\lambda\varphi_n^+ - \frac{\hbar}{2}\left(1-\frac{\hbar}{E_n^+}\check{\partial}^\lambda\right)\left(\hat{\partial}^\lambda - \check{\partial}_\lambda\right)\varphi_n^+ = \frac{W_n^+}{c^2}\varphi_n^+ \quad (4.6.5)$$

The Y^- parallel entanglement represents another essential principle of Y^- natural behaviors - ***Law of Horizon Conservation of Physical Animation and Reproduction***:

阴 Y^- 平行纠缠，阐明了自然行为的另一些本质原理 - 实态盛生和繁衍的层界守恒法则：

1. *The operational action $\check{\partial}_\lambda$ of physical supremacy results in their conjugate or imaginary effects of animations because of the parallel reaction $\hat{\partial}^\lambda$ in the virtual world;*

由于虚态世界的相似反应 $\hat{\partial}^\lambda$，物理优势的操作行为 $\check{\partial}_\lambda$，导致盛生的共轭景象效应；

2. *Neither the actions nor reactions impose their final consequences $\check{\partial}^\lambda\check{\partial}^\lambda$ on their opponents because of the parallel mirroring residuals for the horizon phenomena of reproductions $\hat{\partial}^\lambda\hat{\partial}^\lambda$ during the symmetric fluxions;*

   在对称性流数中，由于繁衍 $\hat{\partial}^\lambda\hat{\partial}^\lambda$ 层界现象的类似镜像驻留，无论是作用还是反作用，都不难将其最终结果 $\check{\partial}^\lambda\check{\partial}^\lambda$ 强加给对偶；

3. *There are one-way commutations of $\check{\partial}^\lambda\check{\partial}_\lambda$ in transporting the events of the physical world into the virtual world asymmetrically. As a part of the reciprocal processes, the virtual world replicates $\hat{\partial}^\lambda$ the physical events during the mirroring $\hat{\partial}^\lambda\check{\partial}_\lambda$ processes in the virtual world.*

   在将物理世界中的事件协称地传送到虚态世界中时，存在着 $\check{\partial}^\lambda\check{\partial}_\lambda$ 的单向交换。作为对偶过程的一个部分，虚态世界在虚拟世界的镜像 $\hat{\partial}^\lambda\check{\partial}_\lambda$ 过程中复制 $\hat{\partial}^\lambda$ 物理事件。

As another set of laws, the events initiated in the physical world must leave a life copy of its mirrored images in the virtual world without the intrusive effects in the virtual world. In other words, the virtual world is aware of and immune to the physical world. In this perspective, continuity for a virtual-life streaming might become possible as a part of recycling or reciprocating a real-life in the physical world.

可见，作为另一套法则，在物理世界中发起的事件必须在虚拟世界中留下镜像的活副本，且不在虚态世界中产生侵入性影响。换言之，虚态世界可以了解物态世界的活动内容，且不受物态世界的影响。从这个角度来看，虚态生命流的连续性可能成为回收利用、或重复再现物理世界中现实生活的一个部分。

7. 宫位场 Superphase Fields

At the loop entanglements $\phi^{+}(\hat{x}) \rightleftharpoons \varphi^{-}(\check{x})$ at the second horizon, the processes operate the particle fields in forms of boost transformations $S_i^{\pm}$, spiral torque representations $R^{\mu}{}_{\nu}$ and $R_{\mu}{}^{\nu}$, and *Gauge* potentials $A_{\nu} \mapsto eA_{\nu}/\hbar$ for electrons, $A^{\nu} \mapsto eA^{\nu}/\hbar$ for positrons, etc. Consequently, we have the total effective fields in each of the respective manifolds:

在第二层界的双环纠缠中，这些过程分别对粒子场进行系列操作，表示形式为：幅度变换 $S_i^{\pm}$，相度转矩 $R^{\mu}{}_{\nu}$ 和 $R_{\mu}{}^{\nu}$，规范气场 $A_{\nu} \mapsto eA_{\nu}/\hbar$ 形成电子，以及规范势气场 $A^{\nu} \mapsto eA^{\nu}/\hbar$ 形为正电子，等等。结果，我们得到了对应每个流形的总场效场：

$$\check{\partial}_{\lambda}\phi^{-} + \hat{\partial}_{\lambda}\varphi^{+} = \dot{x}_{\nu}\tilde{\zeta}_{\nu}\Big[\begin{pmatrix}\partial_{\nu}\\ \partial^{\nu}\end{pmatrix}' \pm i\frac{e}{\hbar}\begin{pmatrix}A_{\nu}\\ A^{\nu}\end{pmatrix}'\Big]\psi^{-} \ :\psi^{-} = \begin{pmatrix}\phi^{-}\\ \varphi^{+}\end{pmatrix}, \quad \tilde{\zeta}^{\nu} = \tilde{\gamma}^{\nu} + \tilde{\chi}^{\nu} \quad (4.7.1)$$

$$\check{\partial}_{\lambda} = \dot{x}_{\nu}\left(S_2^{-} + R_2^{-}\right)\left(\partial_m + i\frac{e}{\hbar}A_{\nu}\right), \qquad \hat{\partial}_{\lambda} = \dot{x}_{\nu}\left(S_1^{+} + R_1^{+}\right)\left(\partial^{\mu} - i\frac{e}{\hbar}A^{\mu}\right) \quad (4.7.2)$$

$$\hat{\partial}^{\lambda}\phi^{+} + \check{\partial}^{\lambda}\varphi^{-} = \dot{x}^{\nu}\tilde{\zeta}^{\nu}\Big[\begin{pmatrix}\partial^{\nu}\\ \partial_{\nu}\end{pmatrix}' \mp i\frac{e}{\hbar}\begin{pmatrix}A^{\nu}\\ A_{\nu}\end{pmatrix}'\Big]\psi^{+} \ :\psi^{+} = \begin{pmatrix}\phi^{+}\\ \varphi^{-}\end{pmatrix}, \ \tilde{\zeta}_{\nu} = \tilde{\gamma}_{\nu} + \tilde{\chi}_{\nu} \quad (4.7.3)$$

$$\hat{\partial}^{\lambda} = \dot{x}^{\nu}\left(S_2^{+} + R_2^{+}\right)\left(\partial^m - i\frac{e}{\hbar}A^{\nu}\right), \qquad \check{\partial}^{\lambda} = \dot{x}^{\nu}\left(S_1^{-} + R_1^{-}\right)\left(\partial_{\mu} + i\frac{e}{\hbar}A_{\mu}\right) \quad (4.7.4)$$

The potential ψ^{-} or ψ^{+} implies each of the loop entanglements is under its Y^{-} or Y^{+} manifold, respectively. The first equation represents the horizon potentials at the local $\check{\partial}_{\lambda}\varphi^{-}$ of the Y^{-} manifold and the transformation $\hat{\partial}_{\lambda}\phi^{+}$ from its Y^{+} opponent. Likewise, the second equation corresponds to the horizon potentials at the local $\hat{\partial}^{\lambda}\phi^{+}$ of the Y^{+} manifold and the transformation $\check{\partial}^{\lambda}\varphi^{-}$ from its Y^{-} opponent. To collapse the above equations together, we have a duality of the states expressed by or degenerated to the classical formulae:

势气场 ψ^{-} 或 ψ^{+} 意味着，每个双环纠缠分别是置于其 Y^{-} 或 Y^{+} 的二象流形之下。第一个方程表示层界气场是驻留 $\check{\partial}_{\lambda}\varphi^{-}$ 在 Y^{-} 流形和来自于对耦势场 $\hat{\partial}_{\lambda}\phi^{+}$ 的转换。同样地，第二个方程表示层界势场是驻留 $\hat{\partial}^{\lambda}\phi^{+}$ 在 Y^{+} 流形和来自于对耦气场 $\check{\partial}^{\lambda}\varphi^{-}$的转换。为了

将上述方程组折叠在一起，我们有一个由经典公式表示或退化为经典公式的状态对偶性：

$$\check{\partial}\psi^{-} \equiv \check{\partial}_{\lambda}\phi^{-} + \hat{\partial}_{\lambda}\varphi^{+} = \dot{x}_{\nu}\tilde{\zeta}_{\nu}D_{\nu}\psi^{-} \qquad : D_{\nu} = \partial_{m} + i\frac{e}{\hbar}A_{m} \qquad (4.7.5)$$

$$\hat{\partial}\psi^{+} \equiv \hat{\partial}^{\lambda}\phi^{+} + \check{\partial}^{\lambda}\varphi^{-} = \dot{x}^{\nu}\tilde{\zeta}^{\nu}D^{\nu}\psi^{+} \qquad : D^{\nu} = \partial^{\nu} - i\frac{e}{\hbar}A^{\nu} \qquad (4.7.6)$$

To our expectation, the A_{ν} and A^{ν} fields are a pair of the graviton and photon potentials. Intuitively, both photons and gravitons are the outcomes and products of a duality of the double entanglements.

出乎我们的意料，气场 A_{ν} and 势场 A^{ν} 是一对引子气和光子势。直观地说，光子和引子都是双纠缠二象性的结果和产物。

8. 狄拉克方程 Dirac Equation

Intrinsically heterogeneous, one of the characteristics of spin is that the events in the Y^+ or Y^-manifold transform into their opponent manifold in forms of bispinors of special relativity, reciprocally. Considering the first order $\dot{\partial}$ only and applying the transformational characteristics (4.5.6-7), we add (4.6.1-5) and put together (4.7.5-6) to formulate the simple compartment:

本质上，自旋的异质性特征之一是，Y^+ 或 Y^- 流形中的事件，以狭义相对论的对耦自旋形式相互转化为它们的对耦流形。考虑 $\dot{\partial}$ 的一阶效应并应用 (4.5.6-7) 的转换特征，我们将 (4.6.1-5) 式加在一起，并与 (4.7.5-6) 一起来构造一个简单成分的方程式：

$$\frac{\hbar}{2}\left(\dot{x}_\nu\zeta_\mu D_\nu - \dot{x}^\mu\zeta^\mu D^\mu\right)\psi_n^\pm \mp E_n^\pm\psi_n^\pm = 0 \qquad (4.8.1)$$

$$\psi_n^+ = \begin{pmatrix}\phi_n^+\\ \varphi_n^-\end{pmatrix}, \quad \overline{\psi}_n^- = \kappa\begin{pmatrix}\varphi_n^-\\ \phi_n^+\end{pmatrix}, \quad \psi_n^- = \begin{pmatrix}\phi_n^-\\ \varphi_n^+\end{pmatrix}, \quad \overline{\psi}_n^+ = \kappa\begin{pmatrix}\varphi_n^+\\ \phi_n^-\end{pmatrix} \qquad (4.8.2)$$

where $\overline{\psi}_n^\pm$ is the adjoint potential and κ is a constant subject to renormalization. Ignoring the torsion fields χ^μ and χ_μ, we have the above compact equations reformulated into the formulae:

其中，$\overline{\psi}_n^\pm$ 是伴随势气场，κ 是受重整化的常数。忽略扭转势气场 χ^μ 和 χ_μ，我们将上述方程重新精致地表述为如下公式：

$$\tilde{\mathscr{L}}_D^+ = \overline{\psi}_n^-\gamma^\mu\left(i\hbar c\partial^\mu + eA^\mu\right)\psi_n^+ + mc^2\overline{\psi}_n^-\psi_n^+ \to 0 \qquad : E_n^+ = -imc^2 \qquad (4.8.3)$$

$$\tilde{\mathscr{L}}_D^- = \overline{\psi}_n^+\gamma_\nu\left(i\hbar c\partial_\nu - eA_\nu\right)\psi_n^- - mc^2\overline{\psi}_n^+\psi_n^- \to 0 \qquad : E_n^- = +imc^2 \qquad (4.8.4)$$

where $\tilde{\mathscr{L}}_D^\pm$ is defined as the classic *Lagrangians*. As a pair of entanglements, they philosophically extend to and are known as *Dirac* equation, introduced in 1925. For elementary (unit charge, massless) fermions satisfying the *Dirac* equation, it suffices to note their field entanglements:

其中，$\tilde{\mathscr{L}}_D^{\pm}$ 定义为经典的拉格朗日方程。由此，在哲理学上完全获得1925年引入的著名狄拉克方程，并延伸和扩展其二象性纠缠效应。　运用于满足狄拉克方程的基本费米子(单位电荷，无质量)，只需注意它们势气场的纠缠：

$$\left(\gamma^{\mu} D^{\mu}\right)\left(\gamma_{\nu} D_{\nu}\right) = D^{\mu} D_{\nu} + \frac{i}{4}[\gamma^{\mu}, \gamma^{\nu}] F_{\mu\nu}^{-n} \tag{4.8.5}$$

Historically, the *Dirac* equation was a major achievement and gave physicists great faith in its overall correctness.

历史上，狄拉克方程是一项重大成就，它给物理学家们对量子学的整体正确性，提供了极大地信心。

9. 薛定谔方程 Schrödinger Equation

For observations under an environment of $W_n^- = -ic^2V^-$ at the constant transport speed *c*, the homogeneous fields are in a trace of the diagonalized tensors. From the first to the second horizon, it is dominated by the virtual events between the residual or local entanglements in forms of

对于在恒定输运速度 *c* 的 $W_n^- = -ic^2V^-$ 环境下进行观测，各项同性场是张量的对角迹。从第一个层界到第二个层界，它主要表现为虚态事件驻留局域间的纠缠，具有如下方程：

$$\check{\partial}_\lambda - \hat{\partial}^\lambda = \dot{x}_\nu S_2^- \partial_m - \dot{x}^m S_2^+ \partial^\nu = 2ic \begin{pmatrix} \partial_\kappa \\ -\partial^\kappa \end{pmatrix} \tag{4.9.1}$$

Referencing the (3.2.4-5) equations, we decode the quantum fields of (4.6.4-5) into the following formulae:

参考 (3.2.4-5) 方程，我们将 (4.6.4-5) 的量子场解码为以下公式：

$$-i\hbar\frac{\partial}{\partial t}\phi_n^- - \frac{i\hbar^2}{2E_n^-}\frac{\partial^2\phi_n^-}{\partial t^2} = -i\frac{(\hbar c)^2}{2E_n^-}\nabla^2\phi_n^- + V^-\phi_n^- \equiv \hat{H}^-\phi_n^- \tag{4.9.2}$$

$$-i\hbar\frac{\partial}{\partial t}\varphi_m^+ + \frac{i\hbar^2}{2E_m^+}\frac{\partial^2\varphi_m^+}{\partial t^2} = -i\frac{(\hbar c)^2}{2E_m^+}\nabla^2\varphi_m^+ + V^-\varphi_m^+ \equiv \hat{H}^+\varphi_m^+ \tag{4.9.3}$$

where $\hat{H}$ is known as the classical *Hamiltonian* operator, introduced in 1834. For the first order of time evolution, it emerges as the *Schrödinger* equation, introduced in 1926.

其中，$\hat{H}$ 是著名的经典哈密顿算符，于1834年引入。对于时间演化的第一阶近视，它呈现出于1926年引入的薛定谔方程。

$$-i\hbar\frac{\partial}{\partial t}\psi = \hat{H}\psi \qquad : \hat{H} \equiv -i\frac{(\hbar c)^2}{2E_n^-}\nabla^2 + V^- \tag{4.9.4}$$

Remarkably, it reveals that the effects of entanglement lies between the first and second horizon of the event operations.

值得注意的是，它揭示了事件操作处于第一和第二层界之间的纠缠效应。

10. 泡利理论 Pauli Theory

In the gauge fields, a particle of mass *m* and charge *e* can be extended by the vector potential $\mathbf{A}$ and scalar electric potential ϕ in the form of $A^\nu = \{\phi, \mathbf{A}\}$ such that the (4.8.4) equation is conceivable by (4.5.6-7) as the following gauge invariant:

在规范场中，质量 *m* 和电荷 *e* 的粒子可以通过矢量势 $\mathbf{A}$ 和标量势 ϕ 以 $A^\nu = \{\phi, \mathbf{A}\}$ 的形式展开，从而 (4.5.6-7) 可以将 (4.8.4) 方程得出以下规范不变量：

$$-i\hbar\zeta^0 D^\kappa \varphi^+ = -\frac{\hbar^2}{2m}(\zeta^r D^r)(\zeta^r D^r)\varphi^+ + \hat{V}\varphi^+ \qquad : D^\nu = D^\kappa + D^r \qquad (4.10.1)$$

$$D^\kappa = \partial^t - i\frac{e}{\hbar}\phi, \quad D^r = \partial^r - i\frac{e}{\hbar}\mathbf{A} \qquad : A^\nu = \{\phi, \mathbf{A}\} \qquad (4.10.2)$$

Since $\gamma^r = (\sigma_x, \sigma_y, \sigma_z) \equiv \boldsymbol{\sigma}$, the *Schrödinger* Equation (4.9.4) becomes the general form of *Pauli Equation*, formulated by *Wolfgang Pauli* in 1927:

由于 $\gamma^r = (\sigma_x, \sigma_y, \sigma_z) \equiv \boldsymbol{\sigma}$，薛定谔方程 (4.9.4) 成为泡利方程的一般形式，由沃尔夫冈·保利于1927年提出：

$$i\hbar\frac{\partial}{\partial t}|\varphi^+\rangle = \left\{\frac{1}{2m}\left[\boldsymbol{\sigma}\cdot\left(\mathbf{p} - e\mathbf{A}\right)\right]^2 + e\phi + \hat{V}\right\}|\psi\rangle \equiv \check{H}|\varphi^+\rangle \qquad (4.10.3)$$

$$\mathbf{p} = -i\hbar\partial^r, \qquad \boldsymbol{\sigma} = (\sigma_x, \sigma_y, \sigma_z) \qquad : \chi^\nu \mapsto 0,\ \partial^t = -\partial_t \qquad (4.10.4)$$

where **p** is the kinetic momentum. The *Pauli* matrices can be removed from the kinetic energy term, using the *Pauli* vector identity:

其中，**p** 是动能。使用泡利向量恒等式，可以从动能项中移除泡利矩阵：

$$(\boldsymbol{\sigma}\cdot\mathbf{a})(\boldsymbol{\sigma}\cdot\mathbf{b}) = \mathbf{a}\cdot\mathbf{b} + i\boldsymbol{\sigma}\cdot(\mathbf{a}\times\mathbf{b}) \qquad : \gamma^r = (\sigma_x, \sigma_y, \sigma_z) \equiv \boldsymbol{\sigma} \qquad (4.10.5)$$

to obtain the standard form of *Pauli Equation*, introduced in 1927.

从而，得到保利方程的标准形式，引入于1927年。

$$i\hbar\frac{\partial}{\partial t}|\psi\rangle = \left\{\frac{1}{2m}\left(\mathbf{p} - e\mathbf{A}\right)^2 - \frac{e\hbar}{2m}\boldsymbol{\sigma}\cdot\mathbf{B} + \tilde{V}\right\}|\psi\rangle \equiv \check{H}|\psi\rangle \qquad (4.10.6)$$

where $\mathbf{B} = \nabla \times \mathbf{A}$ is the magnetic field and $\tilde{V} = \hat{V} + e\phi$ is the total potential including the horizon potential $e\phi$. The *Stern–Gerlach* term, $e\hbar\boldsymbol{\sigma} \cdot \mathbf{B}/(2m)$, acquires the spin orientation of atoms with the valence electrons flowing through an inhomogeneous magnetic field. As a result, the above equation is implicitly observable under the Y^{+} characteristics. The experiment was first conducted by the *German* physicists *Otto Stern* and *Walter Gerlach*, in 1922. Analogously, the term is responsible for the splitting of quantum spectral lines in a magnetic field anomalous to *Zeeman* effect, named after *Dutch* physicist *Pieter Zeeman* in 1898.

其中，$\mathbf{B} = \nabla \times \mathbf{A}$ 是磁场，$\tilde{V} = \hat{V} + e\phi$ 是总电势，包括层场电势 $e\phi$。Stern-Gerlach 项 $e\hbar\boldsymbol{\sigma} \cdot \mathbf{B}/(2m)$ 表示了原子在非均匀磁场中的自旋取向。因此，上述方程在 Y^{+} 特征下是隐式可观测的。这项实验首先由德国物理学家奥托·斯特恩和沃尔特·杰拉赫于1922年进行。类似地，这个特性解释了在一个反常塞曼效应的磁场中量子谱线的分裂，这个现象是于1898年荷兰物理学家皮尔特·塞曼的名字命名的。

11. 洛伦兹激发子 Lorentz Generators

Superphase Fields - As the superphase function from the second to third horizon, the vector field A^{ν} bonds and projects its potentials superseding with its conjugator, arisen by or acting on its opponent A_{ν} through a duality of reciprocal interactions dominated by boost $\tilde{\gamma}$ and twist $\tilde{\chi}$ fields, evolution into the second $(\tilde{\zeta} \mapsto \zeta)$ horizon. Under the Y^{-} or Y^{+} primary, the event operates the third terms of (4.5.6-7) in a pair of the relativistic entangling fields:

宫位场 - 作为第二层界到第三层界的宫位函数，通过以幅度 $\tilde{\gamma}$ 场和相度 $\tilde{\chi}$ 场为主导的二象性对偶作用，矢量场 A^{ν} 契合和投射优于共轭者的势气场，引起和作用于它的对耦 A_{ν} 场，演化为第二 $(\tilde{\zeta} \mapsto \zeta)$ 层界。在 Y^{-} 或 Y^{+} 的主导下，事件将 (4.5.6-7) 方程的第三项运作成一对相对性纠缠场：

$$F_{\nu\mu}^{-n} = \left(\zeta_{\nu}\partial_{\nu}A_{\mu} - \zeta^{\mu}\partial^{\mu}A^{\nu}\right)_{n} = -F_{\mu\nu}^{+n} \qquad : \tilde{F}_{\nu\mu}^{\pm n}(\tilde{\zeta}) \mapsto F_{\mu\nu}^{\pm n}(\zeta) \qquad (4.11.1)$$

The tensor $F_{\nu\mu}^{\pm n}$ is the transform and torque fields at second horizon. The transform and transport tensors naturally consist of the antisymmetric field components and construct a pair of the superphase potentials in world planes, giving rise to the third horizon fields, emerging the four-dimensional spacetime, and producing the electromagnetism and gravitation fields.

张量 $F_{\nu\mu}^{\pm n}$ 是第二层界的变换场和扭矩场。变换张量和输运张量自然地由反对称场分量组成，在世界平面上构成一对宫位势气，开源第三层界场，衍生四维时空，产生电磁场和引力场。

Giving rise to the third horizon, the generators contract with the ζ infrastructure (4.5.1) and evolve into the four-dimensional matrices $SU(2)_{s_1} \times SO(3)_{s_2}$, shown by the following:

产生第三个层界后，激发子将 ζ 基础架构 (4.5.1) 演变成四维矩阵 $SU(2)_{s_1} \times SO(3)_{s_2}$，如下：

$$J_1=\begin{pmatrix}0&0&0&0\\0&0&0&0\\0&0&0&-1\\0&0&1&0\end{pmatrix},\ J_2=\begin{pmatrix}0&0&0&0\\0&0&0&1\\0&0&0&0\\0&-1&0&0\end{pmatrix},\ J_3=\begin{pmatrix}0&0&0&0\\0&0&-1&0\\0&1&0&0\\0&0&0&0\end{pmatrix} \tag{4.11.2}$$

$$K_1=\begin{pmatrix}0&1&0&0\\1&0&0&0\\0&0&0&0\\0&0&0&0\end{pmatrix},\ K_2=\begin{pmatrix}0&0&1&0\\0&0&0&0\\1&0&0&0\\0&0&0&0\end{pmatrix},\ K_3=\begin{pmatrix}0&0&0&1\\0&0&0&0\\0&0&0&0\\1&0&0&0\end{pmatrix} \tag{4.11.3}$$

$$L_\nu^- = K_\nu + iJ_\nu \qquad L_\nu^+ = K_\nu - iJ_\nu \tag{4.11.4}$$

$$[J_1,J_2]^- = J_3 \qquad [K_1,K_2]^- = -J_3 \qquad [J_1,K_2]^- = K_3 \tag{4.11.5}$$

known as *Generator* of the *Lorentz* group, discovered since 1892 or similar to *Gell-Mann* matrices. Conceivably, the K_ν or J_ν matrices are residual $\{\hat{\partial}^\lambda, \check{\partial}_\lambda\}$ or transport $\{\hat{\partial}_\lambda, \check{\partial}^\lambda\}$ components, respectively. During the transitions between the horizons, the redundant degrees of freedom is developed and extended from superphase ϑ of world-planes into the extra physical coordinates, such as θ and ϕ phases of a sphere coordinates.

这就是著名的洛伦兹群激发子，它于1892年被发现，也类似于盖尔-曼矩阵。可以想象，K_ν 或 J_ν 矩阵分别是驻留 $\{\hat{\partial}^\lambda, \check{\partial}_\lambda\}$ 或运通 $\{\hat{\partial}_\lambda, \check{\partial}^\lambda\}$ 分量。在层界之间的转换过程中，世界平面的 ϑ 宫位，将冗余自由度开发并扩展成额外物理坐标，如球坐标 θ 和 ϕ 相位。

Therefore, a duality of reciprocal interactions dominated by boost γ and twist χ fields is developed into the third ($\zeta \mapsto L$) horizon of the field structure at the third or higher horizons.

由此，在幅度 γ 场和相度 χ 场支配的二象性对耦互辅作用下，发展成第三 ($\zeta \mapsto L$) 层界或更高层界的场结构：

$$T_{\nu\mu}^{-n}(L) = \left(L_{\nu\mu}^- \partial_\nu A_\mu - L_{\mu\nu}^+ \partial^\mu A^\nu\right)_n \qquad : F_{\nu\mu}^{\pm n}(\gamma) \mapsto T_{\mu\nu}^{\pm n}(L) \tag{4.11.6}$$

$$\Upsilon_{\nu\mu}^{-n}(L) = \left(L_{\nu\mu}^- \partial_\nu V_\mu - L_{\mu\nu}^+ \partial^\mu V^\nu\right)_n \qquad : F_{\nu\mu}^{\pm n}(\chi) \mapsto \Upsilon_{\mu\nu}^{\pm n}(L) \tag{4.11.7}$$

where $T_{\mu\nu}^{\pm n}(L_\nu^\pm)$ is electromagnetic fields and $\Upsilon_{\mu\nu}^{\pm n}(L_\nu^\pm)$ is gravity fields. Under the Y^- or Y^+ primary, the event operates the third terms of (4.5.6-7) in a pair of the relativistic entangling fields.

其中，$T_{\mu\nu}^{\pm n}(L_\nu^\pm)$ 是电磁场，$\Upsilon_{\mu\nu}^{\pm n}(L_\nu^\pm)$ 是引力场。在Y^-或Y^+优势下，事件运作公式 (4.5.6-7) 的第三项形成一对相对性纠缠场。

12. 质量获取或湮灭 Mass Acquisition or Annihilation

As a duality of evolution, consider *N* harmonic oscillators of quantum objects. The energy spectra operates between the virtual wave and physical mass oscillating from one physical dimension on world planes into three dimensional *Hamiltonian* of *Schrödinger Equation* in spacetime dimensions, shown by the following decoherence:

从二象性的演化来考虑量子模块的 *N* 个谐振子，在虚态波和物态量之间的振荡作用下 ，能量谱在从世界平面上的一维物理量到时空薛定谔方程的三维哈密顿量，表现为以下退相干：

$$\tilde{H} = \sum_{n=1}^{N} \frac{\hat{p}_n^2}{2m} + \frac{1}{2} m \omega_n^2 r_n^2 \qquad : \hat{p}_n = - i\hbar \frac{\partial}{\partial r_n} \qquad (4.12.1)$$

Developed by *Paul Dirac*, the "ladder operator" method introduces a duality of the reciprocal operators:

由保罗·狄拉克开发的“阶梯算子”方法引入了二象性对耦操作和算子：

$$\tilde{H} = \sum_{n=1}^{N} \hbar \omega_n \left(\tilde{a}_n^{\pm} \tilde{a}_n^{\mp} \mp \frac{1}{2} \right) \qquad : \tilde{a}_n^{\mp} = \sqrt{\frac{m\omega_n}{2\hbar}} \left(r_n \pm \frac{i}{m\omega_n} \hat{p}_n \right) \qquad (4.12.2)$$

Under the Y^- supremacy, $\tilde{a}_n^+$ is the creation operation for the wave-to-mass of physical animation, while $\tilde{a}_n^-$ is the reproduction operation for mass-to-wave of virtual annihilation, described by Eq. (3.3.2-3). Intriguingly, the solutions to the above equation can be either one-dimensional *SU*(2) space for ontological evolution or three-dimension for spacetime at the *SU*(3) horizon, shown as the following

在 Y^- 阴优势的场景下，$\tilde{a}_n^+$ 是物理盛生的波到质量的创生操作，$\tilde{a}_n^-$ 是虚态湮灭的质量到波的化行操作，由方程 (3.3.2-3) 详细描述。有趣的是，上述方程的解既可以是本体论进化的一维 *SU*(2) 空间解，也可以是 *SU*(3) 层界上的三维时空解， 如下：

$$\varphi_n^+(r_n) = \frac{1}{\sqrt{2^n\, n!}} \left(\frac{m\omega_n}{\pi\hbar}\right)^{1/4} e^{-\frac{m\omega_n r_n^2}{2\hbar}} H_n\Big(\sqrt{\frac{m\omega_n}{\hbar}} r_n\Big) \qquad (4.12.3)$$

$$\phi_{nlm}^-(r_n, \theta, \phi) = N_{nl} r^l e^{-\frac{m\omega_n}{2\hbar} r_n^2} L_n^{(l+1/2)}\Big(\frac{m\omega_n}{\hbar} r_n^2\Big) Y_{lm}(\theta, \phi) \qquad (4.12.4)$$

$$N_{nl} = \left[\Big(\frac{2\nu_n^3}{\pi}\Big)^{1/2} \frac{2^{n+2l+3}\, n!\, \nu_n^l}{(2n+2l+1)!}\right]^{1/2} \quad : \nu_n \equiv \frac{m\omega_n}{2\hbar} \qquad (4.12.5)$$

The $H_n(x)$ is the *Hermite* polynomials, detail by *Pafnuty Chebyshev* in 1859. The N_{nl} is a normalization function for the enclaved mass at the third horizon. Named after *Edmond Laguerre* (1834-1886), the $L_k^\nu(x)$ are generalized *Laguerre* polynomials for the energy embody dynamically. Introduced by *Pierre Simon de Laplace* in 1782, the $Y_{lm}(\theta, \phi)$ is a spherical harmonic function for the freedom of the extra rotations or the basis functions for *SO*(3).

$H_n(x)$ 是赫米特多项式，由 *Pafnuty Chebyshev* 于1859年详细给出。N_{nl} 是第三层界质量飞地的标准化函数，以 *Edmond Laguerre* (1834-1886) 命名。$L_k^\nu(x)$ 是体现能量动态的广义 *Laguerre* 多项式。$Y_{lm}(\theta, \phi)$是一个球谐函数，1782年由 *Pierre-Simon-de-Laplace* 提出，用于附加自由旋转或 *SO*(3) 的基函数。

Apparently, the ontological normalizations are the integrity between the second horizon for φ_n^+ and the third horizon for ϕ_{nlm}^-. Based on the above artifact at the n=0 ground level $H_0 = L_0 = Y_{00} = 1$, the energy potentials embody the full mass enclave $\phi_n^- \varphi_n^+ \propto m$ that splits between the potential $\varphi_n^+ \propto m^{1/4}$ in the second horizon and $\phi_n^- \propto m^{3/4}$ in the third horizon. Therefore, the density emerges from the second to third horizon for the full-mass acquisition:

很显然，本体规范化是在第二个层界上阳气场 φ_n^+ 和第三个层界上阴势场 ϕ_{nlm}^- 的整合体。 基于上述 *n=0* 基层界 $H_0 = L_0 = Y_{00} = 1$，能量势气全质量飞地 $\phi_n^- \varphi_n^+ \propto m$ 体现了在第二层界 $\varphi_n^+ \propto m^{1/4}$ 和第三层界 $\phi_n^- \propto m^{3/4}$ 之间的分置合成。所以，全质量密度是在第二个层界到第三个层界的衍生过程中得以获取的：

$$\rho^- \approx \phi_0^- \varphi_0^+ = 2\frac{m\omega}{\pi\hbar} exp\big[-\frac{m\omega}{2\hbar}(r_s^2 + r_w^2)\big] \qquad (4.12.6)$$

$$\varphi_0^+ = \left(\frac{m\omega}{\pi\hbar}\right)^{1/4} e^{-\frac{m\omega r_w^2}{2\hbar}} \qquad : \textit{ the second horizon } 第二层界 \qquad (4.12.7a)$$

$$\phi_0^- = 2\left(\frac{m\omega}{\pi\hbar}\right)^{3/4} e^{-\frac{m\omega}{2\hbar} r_s^2}, \qquad : \textit{ the third horizon } 第三层界 \qquad (4.12.7b)$$

where the radius r_s or r_w is the interactive range of the strong or weak forces, respectively. Therefore, the energy embodies its full mass enclave in a process from its ¼ to ¾ core during its evolution of the second to third horizon, progressively. Vice versa for the annihilation.

其中，半径 r_s 或 r_w 分别是强力或弱力的交互作用范围。因此，在第二层到第三层的演化过程中，能量是从1/4到3/4的核心体，逐渐显现出它的全质量飞地；反之亦然。

Remarkably, the operations represent not only a duality of the creation and annihilation, but also the seamless transitions between the virtual world planes and the real spacetime of three-dimensional manifold. For example, the *Sun* is the star at the center of the solar system between the virtual galaxy center of the second horizon and the physical planets of the third or higher horizons. The Sun rotates in the quantum layers with the innermost 1/4 (or higher to include the excited levels at n>0) of the core radius at the second and lower horizons. Between this core radius and 3/4 of the radius, it forms a "radiative zone" for energy embodied at the full mass enclave by means of photon radiation. The rest of the physical zone is known as the “convective zone” for massive outward heat transfer.

令人惊叹，这些操作不仅阐明了创生和毁灭的二象性，而且还表明了虚态世界平面和实体三维时空流形之间的无缝过渡。例如，太阳是太阳系中心的恒星，位于第二层界的虚态星系中心和第三或更高层界的物理行星之间。太阳在量子层中自转，在第二层和较低层界的核心半径的最里面1/4 (或更高，包括n>0的激发能级) 。在这个核心半径和半径的3/4之间，它通过光子辐射在整个质量飞地上形成了能量的“辐射区”；其余的物理区被称为“对流区”，用于大量向外传递热能量。

13. 扭矩奇点 Torque Singularity

Descendent from the world planes with the convention coordinates $\{r, \theta, \varphi\}$, the physical coordinates of a polar system is further extended its metric elements of $ds^2 = dr^2 + r^2(d^2\theta + sin^2 d\varphi^2)$ in a physical $\mathscr{R}^3$ space. The redundant degrees has its freedom of $\{\theta, \varphi\}$ coordinates with the metric and its inverse elements of:

具有约定坐标 $\{r, \theta, \varphi\}$ 的物理极坐标系是由世界平面派生而来的，在物理三维空间 $\mathscr{R}^3$ 中，它的度规元素 $ds^2 = dr^2 + r^2(d^2\theta + sin^2 d\varphi^2)$ 进一步扩展。冗余度规有 $\{\theta, \varphi\}$ 坐标的扩展自由度，其度规和对偶度规，具有如下表达方式：

$$\breve{g}_{\nu\mu} = \begin{pmatrix} 1 & 0 & 0 \\ 0 & r^2 & 0 \\ 0 & 0 & r^2 sin^2\theta \end{pmatrix}, \qquad \breve{g}^{\nu\mu} = \begin{pmatrix} 1 & 0 & 0 \\ 0 & r^{-2} & 0 \\ 0 & 0 & r^{-2} sin^{-2}\theta \end{pmatrix} \qquad (4.13.1)$$

The *Christoffel* symbols of the sphere coordinates become the matrices:

由此，球体坐标的克里斯托菲尔符号，由如下矩阵表述：

$$\Gamma^{-r}_{\nu\mu} = \begin{pmatrix} 0 & 0 & 0 \\ 0 & -r & 0 \\ 0 & 0 & -r sin^2\theta \end{pmatrix} \qquad \Gamma^{-}_{r\nu\mu} = \Gamma^{-r}_{\nu\mu} \qquad (4.13.2)$$

$$\Gamma^{-\theta}_{\nu\mu} = \begin{pmatrix} 0 & 1/r & 0 \\ 1/r & 0 & 0 \\ 0 & 0 & -sin\theta cos\theta \end{pmatrix} \qquad \Gamma^{-}_{\theta\nu\mu} = r^2 \Gamma^{-\theta}_{\nu\mu} \qquad (4.13.3)$$

$$\Gamma^{-\varphi}_{\nu\mu} = \begin{pmatrix} 0 & 0 & 1/r \\ 0 & 0 & cot\theta \\ 1/r & cot\theta & 0 \end{pmatrix} \qquad \Gamma^{-}_{\varphi\nu\mu} = r^2 sin^2\theta \Gamma^{-\varphi}_{\nu\mu} \qquad (4.13.4)$$

Apparently, the divergence of the spiral torque fields has the inverse *r*-dependency, expressed by the divergence in spherical coordinates:

显然，螺旋相度扭矩场的发散与 r 成反比关系，用球坐标中的发散表示为：

$$\nabla \cdot R_1^- = \frac{1}{r^2}\frac{\partial}{\partial r}(r^2\Gamma_{\nu\mu}^{-r}) + \frac{1}{rsin\theta}\Big[\frac{\partial}{\partial\theta}(sin\theta\Gamma_{\nu\mu}^{-\theta}) + \frac{\partial}{\partial\varphi}(\Gamma_{\nu\mu}^{-\varphi})\Big] \qquad (4.13.5)$$

When the r-coordinate aligns to the superposition $\tilde{r}$, the three-dimensions of a physical space has its redundant degrees of freedom $\{\theta, \varphi\}$ such that the torque transportation becomes *r*-dependent inversely proportional to the square of distance or appears as the gravitational singularity. Therefore, one spatial dimension on the world planes evolves its physical world into the extra two-coordinates with a rotational *Central-Singularity*. This nature of physical-supremacy characterizes forces between objects and limits their interactive distances. As an associative affinity, this principle of the central-singularity, for examples, operates the gravitational attractions between the mass bodies, or gives weight to physical objects in residence.

当 r-坐标与超位 $\tilde{r}$ 对准时，物理空间的三维空间有其冗余的自由度 $\{\theta, \varphi\}$，使得转矩的传递变得与距离 r 平方成反比关系，即，表现为引力奇异点。因此，世界平面上的一个空间维度将其物理世界演化为具有旋转中心奇点的两个附加坐标系。这种物质优势的性质表征了物体之间的力，并限制了它们的相互作用距离。例如，作为一种结合亲和力，中心奇点的这一原理控制了物体质量之间的引力吸引，且赋予居住时物理模块的重量。

Inauguration of Gravity - At the second horizon, conservation of *light* is sustained by its potential fields $F_{\nu\mu}^{\pm n}(\gamma)$ and transported by its companion partner: torque $F_{\nu\mu}^{\pm n}(\chi)$ fields. At the third horizon, given rise to, $\zeta^\nu \mapsto L_\nu^\pm$, the freedom of the extra rotations, the world planes are further evolved into *Spacetime* of the three-dimensional manifolds, where the torque $F_{\nu\mu}^{\pm n}(\chi)$ fields are transited to gravitational $\Upsilon_{\mu\nu}^{\pm n}(L_\nu^\pm)$ forces with a central-singularity. Therefore, at the inauguration of mass enclave at the third horizon, appearing as if there were from nothing at the second horizon, the fluxion of the superphase entanglement exerts “magically” gravity fields in a spacetime manifold.

万有引力的诞生 - 在第二个层界中，光的守恒由它的势气场 $F_{\nu\mu}^{\pm n}(\gamma)$ 维持，并伴随着它的传输旋矩 $F_{\nu\mu}^{\pm n}(\chi)$ 的势气场。在第三个层界，考虑到旋转的附加自由度，世界平面进一步演化为三维时空流形 $\zeta^\nu \mapsto L_\nu^\pm$，在那里，扭矩相度场 $F_{\nu\mu}^{\pm n}(\chi)$ 转化为具有中心奇异点的引力场 $\Upsilon_{\mu\nu}^{\pm n}(L_\nu^\pm)$。因此，在第三层界形成物质飞地的同时，它看起来，好像在第

二层界似乎没有任何东西的场景中，宫位纠缠的流动却在时空流形中，却施行了“奇妙”的引力场。

14. 光子速矩阵 Speed Matrix of Light

At an event $\lambda \propto t$, the observable light speed in a free space or vacuum has the relativistic effects of transformations. A summation of the right-side of the four (4.2.1-4) equations represents the motion fluxions:

在一个事件 $\lambda \propto t$ 中，自由空间或真空中的可见光速具有相对性幅度变换效应。叠加四个 (4.2.1-4) 方程右侧的总合，可以表示成具有如下流数的矩阵组：

$$\mathbf{f}_c^+ = \psi_c^- \begin{pmatrix} \hat{\partial}^\nu \\ \check{\partial}^\nu \end{pmatrix}' \psi_c^+ = \psi_c^- \dot{x}^\nu \tilde{\gamma}^\nu \begin{pmatrix} \partial^\nu \\ \partial_\nu \end{pmatrix}' \psi_c^+ \mapsto C_{\nu\mu}^+ \psi_c^- \nabla \psi_c^+ \tag{4.14.1}$$

$$\mathbf{f}_c^- = \psi_c^+ \begin{pmatrix} \check{\partial}_\nu \\ \hat{\partial}_\nu \end{pmatrix}' \psi_c^- = \psi_c^+ \dot{x}_\nu \tilde{\gamma}_\nu \begin{pmatrix} \partial_\mu \\ \partial^\mu \end{pmatrix}' \psi_c^- \mapsto C_{\nu\mu}^- \psi_c^+ \nabla \psi_c^- \tag{4.14.2}$$

where the equations are mapped to the three-dimensions of a physical space at the third horizon ($\tilde{\gamma} \mapsto \gamma$). For the potential fields $\psi_c^\pm = \psi_c^\pm(r) exp(i\vartheta^\pm)$ at massless in the second horizon, we derive the C-matrices for the speed of light:

这里，方程组被映射到第三层界 ($\tilde{\gamma} \mapsto \gamma$) 的三维物理空间。对应于第二层界中无质量的势气场 $\psi_c^\pm = \psi_c^\pm(r) exp(i\vartheta^\pm)$，我们可以导出了光速的 C 矩阵：

$$C_{\nu\mu}^+ = \dot{x}^\nu \gamma^\nu e^{-i\vartheta}, \qquad C_{\nu\mu}^- = \dot{x}_\nu \gamma_\nu e^{i\vartheta} \qquad : \vartheta = \vartheta^- - \vartheta^+ \tag{4.14.3}$$

where the quanta ϑ is the superphase, and $\nu \in (1,2,3)$. Remarkably, the speed of light is characterized by a pair of the above $Y^- Y^+$ matrices, revealing the intrinsic entanglements of light that constitutes of transforming γ-fields and superphase modulations. Philosophically, no light can propagate without the internal dynamics, which is described by the off-diagonal elements of the C-matrices. Applying to an external object, the quantities can be further characterized by the diagonal elements of the C-matrices at the r-direction of world lines, shown by the following:

其中，数值 ϑ 是宫位量子，且$\nu \in (1,2,3)$。值得注意的是，光速的特征是由以上的一对 $Y^- Y^+$ 矩阵组成，揭示了光的内在纠缠性，这些纠缠构成了γ-场的转换和宫位位的调制。从哲理学上看，光的传播离不开上述C-矩阵的非对角元所描述的内在动态学。应

用于外部对象的观察，这些量可以由世界线 r 方向上的C-矩阵对角元素进一步表征，如下所示：

$$C_{rr}^{\pm} = ce^{\mp i\vartheta} \qquad : \textit{Speed of Light 光速} \ = |C_{rr}^{\pm}| = c \qquad (4.14.4)$$

As expected, the speed of light is generally a non-constant matrix, representing its traveling dynamics sustained and modulated by the $Y^{-}Y^{+}$ superphase entanglements. Because the constituent elements of the γ-matrices are constants, the amplitude of the C-matrices at a constant c is compliant to and widely known as a universal physical constant. The speed C-matrix applies to all massless particles and changes of the associated fields travelling in vacuum or free-space, regardless of the motion of the source or the inertial or rotational reference frame of the observer.

犹如我们预期的那样，光速通常是一个非常数矩阵，表示其由 $Y^{-}Y^{+}$ 宫位纠缠所维持和调制的传播动态学。由于，γ-矩阵的组成元素是常数，所以，C-矩阵在常数 c 处的振幅符合并被广泛称为普适物理常数。速度C-矩阵适用于在真空或自由空间中运动的所有无质量粒子和相关场的变化，与源的运动或观测器的惯性或旋转参考系无关。

15. 引子速矩阵 Speed Matrix of Gravitation

Similar to the motion fluxions of light, one has to have its flux companion of gravitational fields in a free space or vacuum:

与光子运动相类似，自由空间或真空中必须伴随着引子场的流动：

$$\mathbf{f}_g^+ = \psi_g^- \begin{pmatrix} \hat{\partial}^\nu \\ \check{\partial}^\nu \end{pmatrix}' \psi_g^+ = \psi_g^- \dot{x}^\nu \tilde{\chi}^\nu \begin{pmatrix} \partial^\nu \\ \partial_\nu \end{pmatrix}' \psi_g^+ \mapsto G_{\nu\mu}^+ \psi_g^- \nabla \psi_g^+ \quad (4.15.1)$$

$$\mathbf{f}_g^- = \psi_g^+ \begin{pmatrix} \check{\partial}_\nu \\ \hat{\partial}_\nu \end{pmatrix}' \psi_g^- = \psi_c^+ \dot{x}_\nu \tilde{\chi}_\nu \begin{pmatrix} \partial_\mu \\ \partial^\mu \end{pmatrix}' \psi_g^- \mapsto G_{\nu\mu}^- \psi_g^+ \nabla \psi_g^- \quad (4.15.2)$$

Unlike the light transformation seamlessly at massless boost, the uniqueness of gravitation is at its massless transportation of the χ-matrices spirally from the second horizon potential $\psi_g^+ = \psi_g(r)exp(i\vartheta)$ of world planes into the third horizon potential $\psi_g^- = \psi_{nlm}(r_n, \theta, \phi)$ of the *L*-matrices of spacetime manifolds for its massive gravitational attraction. At inception of the mass enclave in the second horizon, the *G*-matrices are free of its central-singularity $r \to 0$, and result in:

不同于光在无质量幅度地无缝转换性，引子的奇特性在于它将世界平面的第二层界阳场 $\psi_g^+ = \psi_g(r)exp(i\vartheta)$ 的矩阵，以无质量相度传输到的第三层界阴场 $\psi_g^- = \psi_{nlm}(r_n, \theta, \phi)$ 的时空流形，由*L*-矩阵形成其强大的引力效应。在第二层界开源质量飞地时，G-矩阵不存在 $r \to 0$ 的中心奇异点，从而导致

$$G_{\nu\mu}^+ = \lim_{r\to 0} (x^\nu \dot{x}^\nu \chi^\nu e^{-i\vartheta}) = x^\nu \dot{x}^\nu \epsilon_3 e^{-i\vartheta} = c_g s_1 e^{-i\vartheta} \quad : \quad s_1 = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} \quad (4.15.3)$$

$$G_{\nu\mu}^- = \lim_{r\to 0} (x_\nu \dot{x}_\nu \chi_\nu e^{i\vartheta}) = x_\nu \dot{x}_\nu \epsilon_3 e^{i\vartheta} = c_g s_1 e^{i\vartheta} \quad (4.15.4)$$

$$Speed\ of\ Gravitation\ \text{引子速} = |G_{\mu\nu}^\pm| = c_g \quad : \mu \neq \nu \quad (4.15.5)$$

Remarkably, the gravitational speed c_g is a constant similar to the speed of light, but propagating orthogonally in the off-diagonal elements. Interrupting with mass objects at the third horizon, the gravitation becomes gravity that exerts a force inversely proportional to a square of the distance. Apparently, gravity has the same characteristics of the quantum entanglement.

值得注意的是，引子速度 c_g 是一个与光速相似的常数，但在非对角元素中以正交方式传播。在第三个层界与质量体相互作用时，引子场就变成了引力场，它所形成和施加力与距离的平方成反比。显然，引力具有量子纠缠的类同特性。

16. 波粒二象性 Wave-Particle Duality

Since light exhibits wave–particle duality, its properties must acquire characteristics of both waves and particles. A duality of the energy formations of light has both of its convertible form to physical mc^2 mass and its transportable form at virtual $\hbar\omega$ wave. It is conservation of energy $\hat{E}^2 = \hat{\mathbf{P}}^2 + 4m^2c^4$ and invariance of momentum $\mathbf{P} = ic\hat{\mathbf{p}} \mapsto \mp i\hbar c\mathbf{k}$ that maintain the light transformable between a duality of virtual and physical states. Together, it derives a pair of irreducible virtual unit $\pm\hbar\omega$, known as *Planck–Einstein* relation as well as a pair of physical unit mc^2. The property of light becomes a complex form of virtual and physical duality as the following:

由于，光具有波粒二象性，所以，它的性质必须同时具有波和粒子的特性。光能量形成的二象性，既有它的可转换形式到物理的 mc^2 质量，也有它可移动形式的虚态 $\hbar\omega$ 波。正是能量守恒 $\hat{E}^2 = \hat{\mathbf{P}}^2 + 4m^2c^4$ 和动量不变性 $\mathbf{P} = ic\hat{\mathbf{p}} \mapsto \mp i\hbar c\mathbf{k}$，使得光在虚态和物态的对偶性之间，即保持了可转换性，也导出了一对虚单元 $\pm\hbar\omega$ 的不可约性，以及一对物单元 mc^2 的质量性，称为普朗克-爱因斯坦关系。光的性质变成了一种复杂的虚态和物态二象性形式，如下所示：

$$\tilde{E}_c^{\mp} = \hbar\omega \pm imc^2 \qquad : \hbar\omega \rightleftharpoons mc^2 \qquad (4.16,1)$$

where $\hbar\omega$ is named as ***Photon Energy*** - a fundamental property of light. As a constant, a photon defines an irreducible unit of energy state either at virtual $\hbar\omega$ or at physical mc^2, but not at both. The photon's wave and quanta qualities are two observable aspects of a duality phenomenon, which obey law of conservation of energy as the following:

这里，$\hbar\omega$ 定义了光基本性质的光子能量。作为一个光常数，不管是在虚态还是在物态，光子定义了一个不可约的能量状态单位，并且，不能同时处在于两个态。光子的波和量子性质是二象性现象的两个可观察方面，它们遵循如下能量守恒定律：

$$\left(\hat{\mathbf{P}} + i\hat{E}\right)\left(\hat{\mathbf{P}} - i\hat{E}\right) = 4E_n^+E_n^- \qquad (4.16.2)$$

$$\hat{E} = -i\hbar\partial_t, \qquad \mathbf{P} = ic\hat{\mathbf{p}} \qquad \hat{\mathbf{p}} = -i\hbar\nabla \tag{4.16.3}$$

$$\nabla^2 - \frac{1}{c^2}\frac{\partial^2}{\partial t^2} = 4\frac{E_n^- E_n^+}{(\hbar c)^2} \qquad \because \nabla^2 = \left[\nabla^2\right]_n^+ - \left[\nabla^2\right]_n^- \tag{4.16.4}$$

where $\mathbf{p}$ is the momentum vector. In the center of entanglement, the colliding duality has no net momentum. Whereas a single photon always has momentum, conservation of momentum (equivalently, transformation invariance) requires that at least two photons be created for entanglement, with zero net momentum.

其中，$\mathbf{p}$ 是动量向量。作为纠缠的核心，碰撞对偶没有净动量。而单光子总是有动量的，动量守恒 (等价地说，变换不变性) 要求至少有两个光子产生纠缠，净动量为零。

For example, in a free space, a light traveling the 2-dimensional manifolds $\{r, \pm ict\}$ of the world planes has the two wave functions, respectively and simultaneously $\Phi_c \propto exp\left(\mp\frac{i}{\hbar c}(m_c c^2 t \pm \hbar\omega r)\right)$. They carry quantities that might be simulated by spin angular momentum. From the conservation of energy $E_c \mapsto \hbar\omega$, it appears that the magnitude of its spin were $\hbar$ at the component measured along its direction of motion. This is because the total E_c energy includes both photon energies for the dual manifolds. There are two possible helicities $\pm\hbar$, called right-handed and left-handed, correspond to the two possible circular polarization states of the photons.

例如，在自由空间中，光通过世界平面的二维流形 $\{r, \pm ict\}$ 时，分别同时具有两个波函数 $\Phi_c \propto exp\left(\mp\frac{i}{\hbar c}(m_c c^2 t \pm \hbar\omega r)\right)$，它们携带的量可以用自旋角动量来模拟；从能量守恒 $E_c \mapsto \hbar\omega$ 的角度看，它的自旋在沿运动方向测得的分量是 $\hbar$。这是因为对于双流形，总的 E_c 能量包括两个光子能量，它们有称为右手和左手螺旋度 $\pm\hbar$ 的两种可能性，对应着于光子的两种可能的圆偏振态。

17. 大爆炸理论 Big Bang Theory

In the *Big Bang* theory, "the universe began from a singularity," introduced in 1927 by *Lemaître*, and the expansion of the observable universe began with the explosion of a single particle at a definite point in time. According to our horizon infrastructure, obviously, the universe is amazingly a chain of the seamlessly processes at the *conservation of superphase evolutions* for the progressive mass acquisitions from virtual non-singularity to physical spacetime singularity. The gravitational singularity exists only at the third horizon where the energy embodies its enclave as a mass object, which gains the rotational coordinates freely.

在大爆炸理论中，"宇宙开源于奇点"，1927年由 Lemaître 提出，可观测宇宙的膨胀始于单个粒子在某一时间点的爆炸。然而，根据我们层界的基础架构，宇宙显然是一个神奇的生态链，在宫位演化守恒下，是一个从虚态非奇异到物态时空奇异的渐进质量获取过程；引力奇点只存在于第三层界，在那里，能量以质量廓体的形式体现为飞地，从而获得旋转性自由坐标。

Applicable to prevail in the earliest states of physical objects, *Big Bang Theory* would have been a cosmological model for the universe, if the ordinary matter in the universe were dominant or created virtual energy. Therefore, the model of "*Big Bang* theory" might be limited to a reverie process of the mass inauguration in physical only. Besides, in reality, acceleration of a physical object is simply embarrassed by a common phenomenon or a result of the generation process of light radiations.

如果宇宙中的普通事态占主导地位并产生了虚拟能量，大爆炸理论也许可能成为宇宙学模型，适用于最早的物理开源虚态状态，所以，"大爆炸理论"的模型只能仅限于物理意义上的质量处形的遐想过程。此外，在现实中，人们困惑于为什么，仅仅是由于一个光辐射过程的普遍现象，就导致了产生一个物理实体的加速结果。

A property of the entire universe is orchestrated as a whole rather than a phenomenon that applies just to one part of the universe or from the physical observation only.

整个宇宙的特性是具有一个整体规划，而不是仅仅来源于宇宙某一个特别部分或仅仅来自物理观测的表面现象。

18. 结论 Conclusions

Complying with classical and contemporary physics, this *Universal and Unified Field Theory* demonstrates its holistic foundations applicable to the well-known natural intrinsics of the following remarks:

《宇宙统一理论》与经典物理学和当代物理学相吻合，证明了它的整体基础适用于下列著名的自然本性：

1. *At the two-dimensions of the world planes, a pair of boost transform and spiral transport, entangling generators $\tilde{\gamma}^{\nu}$- and $\tilde{\chi}^{\nu}$-matrices, incepts, acquires, and extends the empirical formulae of, but not limited to, Pauli spin γ^{μ}-matrices, torque χ^{μ}-matrices, Lorentz generators, and transformation and transportation structures of quantum fields.*

   在二维世界平面上，一对幅度变换与相度运通，通过纠缠激发子的 $\tilde{\gamma}^{\nu}$-和 $\tilde{\chi}^{\nu}$-矩阵，开源、获收和推广了泡利自旋 γ^{μ}-矩阵、转矩 χ^{μ}-矩阵、洛伦兹激发子、以及量子场的变换与运通结构的经验公式。

2. *Stateful Einstein mass-energy is refined philosophically as the entanglements $\hbar\omega \rightleftharpoons mc^2$ of complex states with virtual conjugation interpretations $E_n^{\mp} = \pm\, imc^2$.*

   在哲理学上，提炼爱因斯坦质能方程为全态复数纠缠，赋予了虚拟共轭的诠释 $E_n^{\mp} = \pm\, imc^2$。

3. *Lagrangian $\mathscr{L}$ is concisely redefined philosophically as the entanglements of continuity*（*3.2.7-8*）*and Dirac equation (4.8.3-4) dynamically transported and balanced between the manifolds and horizons.*

   在哲理学上，拉格朗日量 $\mathscr{L}$ 被简要地重新定义在流形和层界之间动态运通和平衡的纠缠连续性 （*3.2.7-8*）和 狄拉克方程 *(4.8.3-4)* 。

4. *Quantum physics is derived as compliance to contemporary physics and particle physics, testified by the empirical theories of Schrödinger, Dirac, Klein–Gordon and Pauli equations, Quantum Electrodynamics, etc.*

   所导出的量子物理学，不仅，符合当代物理学和粒子物理学，而且，与薛定谔、狄拉克、克莱因-戈登、泡利方程、量子电动力学等经验理论完全吻合。

5. *Embody Structure of Mass Enclave is an evolutionary process from the second horizon of world line giving rise to the third horizon of the physical spacetime manifold.*

   物质飞地的质量结构是世界线在第二层界演化到第三层界的物态时空流形中产生的偶合。

6. *Besides a constant, the speed of light is entangled or operated by the C-matrices of the superphase modulations.*

   除了具有一个常数意义外，光速还受 *C*-矩阵宫位位调制的纠缠或操作。

7. *Likewise, the speed of gravitation has the superphase modulations operated by the G-matrices.*

   与光速类似，引子场的速度也是*G*-矩阵运作的宫位调制。

8. *Consequently, this manuscript of the Universal Topology has testified and extended to the numerous theoretical foundations, mathematical framework, event operations, and world equations for the quantum physics.*

   因此，本宇宙拓扑学的手稿已经被认证和扩展到了量子物理学的众多理论基础、数学框架、事件运作和世界方程，等。

Natural Secret of Scalar Fields - Since the evolutionary processes of the mass inauguration is between the second and third horizons, the scalar fields are massless instances under the virtual supremacy dominant at the first and second horizons. In addition, the scalar potentials are the gauge fields, operated by the superphase modulation and subjected to the event actions. Conceivably and strikingly, the scalar fields behaves or known as *Dark Energy*.

标量场的自然秘密 - 由于标量场是在第一和第二层界支配的虚态优势下的无质量事例，从而，导致了物质诞生的演化过程介于第二和第三层界之间；另外，标量势气场是由宫位调制的，并从属于事件运作的规范场，可以想象和引人注目的是，标量场的行为也可被称为暗能量。

热态动力学 Thermodynamics

Chapter 5　第 5 篇

In this chapter, the previous contexts are unfolded into further details to testify empirically how and why *Fluxion Fields* can prevail a series of groundbreakings over our classic *Thermodynamics* to declare *Photon and Graviton Fields* as a part of *Universal and Unified Field Theory*.

在这一章中，前面的内容将在细节上进一步展开，并从经验证明，流动场如何和为什么能够跨越我们经典热力学而形成一系列突破，从而表明光子场和引子场是宇宙统一场理论的一部分。

During the formation of the horizons, movements of macro objects undergo interactions with and are propagated by the Y^+ commutative fields, while events of motion objects are characterized by the Y^- continuity dynamics. Under the formations of the ground horizons, the Y^-Y^+ dynamics of the symmetric system aggregates timestate objects to develop thermodynamics related to bulk energies, statistical works, and interactive forces at the third horizon towards the next horizon of macroscopic variables for processes and operations characterized as a massive system, associated with the rising temperature.

在层界形成过程中，宏观物体的运动与 Y^+ 对易场相互作用并进行传播，而运动模块的事件，则具有 Y^- 连续性动态学的特征。在基态层界的形成过程中，对称系统的 Y^-Y^+ 动态学集聚了时态模块，发展出与体积能、统计功和第三层界相互作用有关的热力学，并向更高层次的宏观变量发展，这些宏观运作过程被描述为具有温度特征的一个大质量系统。

1. 二象性热态密度 Duality of Thermal Densities

Consider a system with entropy $S(E, V, N_n)$ that undergoes a small change in energy, volume, and number $N_n^{\pm}$, the system has the change in entropy as the following

设一个系统的熵 $S(E, V, N_n)$ 在能量、体积和数量上都发生了微小的扰动，这个系统的熵变可以表述为

$$dS = \frac{\partial S}{\partial E}dE + \frac{\partial S}{\partial E}\frac{\partial E}{\partial V}dV + \frac{\partial S}{\partial E}\sum_n \left(\frac{\partial E}{\partial N_n^{\pm}}dN_n^{\pm}\right)$$

$$= \frac{1}{T}\left(dE + PdV - \sum_n \mu_n dN_n^{\pm}\right) \qquad (5.1.1)$$

$$\frac{1}{T} \equiv \frac{\partial S}{\partial E} \qquad P \equiv \left(\frac{\partial E}{\partial V}\right)_T \qquad (5.1.2)$$

known as fundamental laws of thermodynamics where the terms of temperature T and pressure P are defined precisely. Temperature is a scalar function of the balanced macroscopic system where the internal energy of the micro-state respectively entangling and interrupting with its external states of the opponents. The principles of thermodynamics were established and developed by Rudolf Clausius, William Thomson, and Josiah Willard Gibbs, introduced during the period from 1850 to 1879.

这就是著名的热力学基本定律，其中温度T和压力P的表述也被明确地定义了。温度：是各微观物态内部能量分别对其外部物态进行作用时，它们共轭纠缠的一种宏观平均状态的系统标量函数。热力学原理是由 Rudolf Clausius，William Thomson 和 Josiah Willard Gibbs 在1850-1879年间建立和发展起来的。

Furthermore, convert all parameters to their respective densities as internal energy density $\rho_E = E/V$, thermal entropy density $\rho_s = S/V$, mole number density

$\rho_{n_i} = N_i/V$, and state density of $\rho_\psi \sim 1/V$, the above equation has the entropy relationship among their densities as the following:

与此同时，将所有参数转化为各自的密度，如内能密度 $\rho_E = E/V$、热熵密度 $\rho_s = S/V$、摩尔数密度 $\rho_{n_i} = N_i/V$、态密度 $\rho_\psi \sim 1/V$，上述熵方程的密度关系，可以表述如下：

$$S_\rho = -k_s \int \rho_\psi dV = -k_s \int \frac{d\rho_E - Td\rho_s - \sum_i \mu_i d\rho_{n_i}}{T\rho_s + \sum_i \mu_i \rho_{n_i} - (P + \rho_E)} dV \tag{5.1.3}$$

Satisfying entropy equilibrium at extrema results in the general density equations of the thermodynamic fields:

满足熵在极值的平衡，可以得到热力学场的广义密度方程组：

$$Y^- : d\rho_E^- = Td\rho_s^- + \sum\nolimits_i \mu_i d\rho_{n_i}^- \tag{5.1.4}$$

$$Y^+ : P + \rho_E^+ = T\rho_s^+ + \sum\nolimits_i \mu_i \rho_{n_i}^+ \tag{5.1.5}$$

The first equation indicates that entropy increases towards Y^- maximum in physical disorder, so that the dynamics of the internal energy are the interactive fields of thermal and chemical reactions as they influence substance molarity. The second equation indicates that entropy decreases towards Y^+ minimum in physical order, so that both external forces and internal energy hold balanced macroscopic fields in one bulk system.

第一个方程表明，在物理无序增加时，熵值增加趋向Y^-阴极大，由此，内能动态学是热反应和化学反应相互作用的场，它们影响物质的摩尔浓度。第二个方程表明，在物理有序增加时，熵值递减趋向于Y^+阳极小值，使得外力和内能在一个整体系统中保持宏观场的平衡效应。

At the arisen horizon, a macroscopic state consists of pairs of $Y^-\{\rho^-, \varrho^+ = \rho^{-*}\}$ and $Y^+\{\rho^+, \varrho^- = \rho^{+*}\}$ thermal density fields. By mapping $\phi_n^\pm \mapsto \rho^\pm$, $\varphi_n^\pm \mapsto \varrho^\pm$ and $x_0 \mapsto \beta$, the same mathematical framework in deriving (4.8.3-4) can be reapplied to formulate a duality of the thermal densities. At the second horizon, the operator ∂_μ

can be defined by reference to the 2-tuple coordinates of *Thermodynamic Space* as a duality of the z-manifolds by the following:

在场界上升时，宏观状态由一对热态Y^-阴密度$\{\rho^-, \varrho^+ = \rho^{-*}\}$和$Y^+$阳密度场组成。通过映射 $\phi_n^\pm \mapsto \rho^\pm$、$\varphi_n^\pm \mapsto \varrho^\pm$ 和 $x_0 \mapsto \beta$，可以重新应用相同的数学框架 (4.8.3-4) 来表示热密度的二象性，在第二个层界，通过参考热力学空间的二元坐标，可以将算符 ∂_μ 定义为z-流形的对偶：

$$z_m \in \check{z}\{z_0, z_1\} \in Y^-\{\mathbf{r} + i\beta\} \qquad : z_0 = \beta \equiv i/(k_B T) \tag{5.1.6}$$

$$z^\mu \in \hat{z}\{z^0, z^1\} \in Y^+\{\mathbf{r} - i\beta\} \qquad : z^0 = -z_0, \ \mathbf{r} \mapsto V \tag{5.1.7}$$

For the density equation of *World Equation* (3.4.5), we acquire an entropy S_T of the energy density, $\rho_T = \rho_n^+(\hat{z}, \lambda)\rho_n^-(\check{z}, \lambda)$, at the equilibrium as the following:

对于世界方程 (3.4.5) 的密度方程，我们在平衡点得到能量密度的熵 $\rho_T = \rho_n^+(\hat{z}, \lambda)$ $\rho_n^-(\check{z}, \lambda)$，如下所示：

$$S_T = -\int \rho_T d\Gamma = -k_T \int d\Gamma \left(W_0^T + \kappa_1 \dot{\partial}_{\lambda_1} + \kappa_2 \dot{\partial}_{\lambda_2} \dot{\partial}_{\lambda_1} \cdots \right) \rho_n^+(\hat{z}, \lambda) \rho_n^-(\check{z}, \lambda) d\Gamma \tag{5.1.8}$$

where ρ^- and ρ^+ are the Y^- and Y^+ fields of the thermal density at a macroscopic state. Because of the macro effects, for Y^-Y^+ fields of density ρ^- and ρ^+ in macroscopic state. Based on the principle of entropy extrema requires $\delta S_\psi = 0$ at fixed end-states, we similarly derive the Motion Operations of thermodynamic fields similar to the equations of (3.5.1-2). The same mathematical framework can be applied for formulations of the equations of (3.6.1) and (3.2.5), which derives the thermodynamic density equations in the following form:

其中，ρ^- 和 ρ^+ 是宏观状态下的热密度的 Y^- 和 Y^+ 场。由于宏观效应，对于宏观状态下密度为 ρ^- 和 ρ^+ 的场。根据熵极值要求 $\delta S_\psi = 0$ 在固定端态的原理，我们同样推导出了类似于（3.5.1-2）方程的热力学场的极小运算。同样的数学框架也适用于（3.6.1）和（3.2.5）的公式，所以，可以简化推导热力学密度方程如下：

$$\kappa_2 \left(\dot{z}_\kappa^2 \partial_\kappa^2 + \dot{z}_r^2 \nabla^2 \right) \rho_n^+ = W_n^T \rho_n^+ \qquad : W_n^T = i c_\rho^2 \hat{U}(\mathbf{r}, \beta_0) \tag{5.1.9}$$

$$\left(-2\dot{z}_\kappa \kappa_1 \partial_\kappa + 3\kappa_2 \dot{z}_\kappa^2 \partial_\kappa^2 + \kappa_2 \dot{z}_r^2 \nabla^2 \right) \rho_n^- = W_n^T \rho_n^- \quad : \dot{z}_m = \{ic_\rho, c_\rho\}, \ \beta_0 \equiv i/(k_B T_0) \tag{5.1.10}$$

Under the first and second orders at the constant speed c_ρ, they give rise to the horizon temperature during the Y^-Y^+ evolutions of the entanglements and form thermodynamics characterized by the formulae:

在匀速 c_ρ 的一阶和二阶下，它们在纠缠的 Y^-Y^+ 演化过程中产生了视界温度，形成了热力学，其特征如下：

$$h_\beta \frac{\partial^2 \rho^+}{\partial \beta^2} = \hat{H}\rho^+ \qquad : \kappa_2 = ih_\beta, \ \hat{H} \equiv -h_\beta \nabla^2 + \hat{U}(\mathbf{r}, \beta_0) \qquad (5.1.11)$$

$$-i\frac{\partial \rho^-}{\partial \beta} + 3h_\beta \frac{\partial^2 \rho^+}{\partial \beta^2} = \hat{H}\rho^- \qquad : \kappa_1 = \frac{c_\rho}{2}, \ \beta = i/(k_B T) \qquad (5.1.12)$$

where the total destiny $\rho = \rho^+\rho^-$ and the horizon constant h_β. They are a set of the field constant of thermodynamics. The equations are known as *Bloch* equations introduced in 1932 for the grand canonical ensemble on *N*-particles.

其中，整体密度为 $\rho = \rho^+\rho^-$，层界常数为 h_β，它们都是热力学的一组层场常数。这些方程称之为布洛赫方程，引入于1932年，用于描述大量*N*-粒子的热力系统，也称正则系综。

The formula of equation (5.1.11) illustrates that the Y^+ harmonic oscillations produce thermal reactions to maintain the Y^- thermodynamics of equation (5.1.12). The thermal operator of $\partial^2/\partial\beta^2$ appears as part of the internal energy that gives rise to the bulk dynamics along with kinetic energy and its horizon constant h_β. As a thermal horizon of dynamic equations for Y^-Y^+ densities, the operator communicates a parametrized relationship of h_β between a quantum state constant of $\hbar$, and a thermal variable of $\beta = i/k_B T$. Therefore, during the thermal and space evolutions, the bulk density of physical dynamics rises from each other's opponent of reciprocal fields into macroscopic scope. As macro objects, a bulk system is a result of Y^-Y^+ entanglements in thermodynamics, as a duality of flux continuity for the current densities.

方程（5.1.11）说明 Y^+ 谐波振荡产生热反应，以维持方程（5.1.12）的 Y^- 热力学。$\partial^2/\partial\beta^2$ 的热算符是内能的一部分，它与动能及其视界常数 h_β 一起产生了体动态学。作

为 $Y^{-}Y^{+}$ 密度动态学方程的热视界，算符在量子态常数 $\hbar$ 和热变量 $\beta = i/k_BT$ 之间传递了 h_β 的参数化关系。因此，在热演化和空间演化过程中，物理动态学的体积密度从相互对立的场上升到宏观范围。作为宏观对象，体系统是热力学中 $Y^{-}Y^{+}$ 纠缠的结果，是电流密度通量连续性的二象性。

2. 通量传播 Flux Propagation

At both of the boost and twist transformations at a constant speed, the (4.6.1-2) equations obey the time-invariance, transform between virtual and physical instances, and transport into the third horizon *SU*(3). For the external observation, the diagonal elements can be converted into a pair of dynamic fluxions of the Y^-Y^+ energy flows, shown by the following equations:

在恒速幅度变换和相度变换下，方程 (4.6.1-2) 服从时间不变性，在虚态和实态事体之间进行变换，并运通到第三层界 *SU*(3)。对于外部观测，对角元可以转化为一对 Y^-Y^+能量流的动态流数，有如下方程表述：

$$\hbar^2 \check{\partial}_\lambda \check{\partial}^\lambda \phi_n^+ = 2E_n^- E_n^+ \phi_n^+ \rightarrow \frac{1}{c^2}\frac{\partial^2 \phi_n^+}{\partial t^2} - \nabla^2 \phi_n^+ = 2\frac{E_n^- E_n^+}{(\hbar c)^2}\phi_n^+ \qquad (5.2.1)$$

$$\hbar^2 \hat{\partial}_\lambda \hat{\partial}_\lambda \varphi_n^- = 2E_n^- E_n^+ \varphi_n^- \rightarrow \frac{1}{c^2}\frac{\partial^2 \varphi_n^-}{\partial t^2} + \nabla^2 \varphi_n^- = 2\frac{E_n^- E_n^+}{(\hbar c)^2}\varphi_n^- \qquad (5.2.2)$$

where the (3.2.4-5) equations are applied. It extends and amends the *Klein–Gordon* equation, introduced in 1926, by a factor of 2. Adding φ_n^- times the first equation and ϕ_n^+ times the second equation, one has an observable flux-continuity of the Y^+-primacy entanglement.

其中，应用了 (3.2.4-5) 方程组。它将1926年引入的 Klein-Gordon 方程扩展和修正了一个2倍的常数。将第一方程左边乘以 φ_n^- 倍，并与第二方程左边乘以 ϕ_n^+ 后相加，就可以获得一个具有可观测的Y^+纠缠优势的通量连续性。

$$\Diamond_n^+ = 2\frac{E_n^- E_n^+}{(\hbar c)^2}\varphi_n^- \phi_n^+ \qquad \because \Diamond_n^+ \equiv \left\langle \frac{1}{c^2}\frac{\partial^2}{\partial t^2} \right\rangle_n^+ - \left[\nabla^2\right]_n^+ \qquad (5.2.3)$$

Correspondingly, the diagonal elements of the (4.6.2) equation can be similarly reformulated to the Y^--primacy flux-continuity.

相同地，方程 (4.6.2) 的对角元素也可以类似地重新表述为Y^-优势的通量连续性。

$$\Diamond_n^- = 2\frac{E_n^- E_n^+}{(\hbar c)^2}\varphi_n^+ \phi_n^- \qquad : \Diamond_n^- \equiv \left\langle \frac{1}{c^2}\frac{\partial^2}{\partial t^2}\right\rangle_n^- + \left[\nabla^2\right]_n^- \tag{5.2.4}$$

Together, they represent a flux propagation of the $Y^- Y^+$ entanglements:

它们一起代表了 $Y^- Y^+$ 纠缠的通量传播：

$$\Diamond_n \equiv \Diamond_n^+ + \Diamond_n^- = 4\frac{E_n^- E_n^+}{(\hbar c)^2}\Phi_n \qquad : \Phi_n = \frac{1}{2}\left(\varphi_n^- \phi_n^+ + \varphi_n^+ \phi_n^-\right) \tag{5.2.5}$$

where Φ_n is the potentials in an average equivalency. Amazingly, it reveals that an integrity of entanglements lies at the continuity of virtual time and the commutators of physical space.

这里，Φ_n 是平均势气场能。令人惊讶的是，它揭示了纠缠完整性是处于虚态时间的连续性和物态空间的对易性。

3. 动量能守恒 Energy-Momentum Conservation

Since two photons can convert to each of the mass-energies $E_n^{\mp} = \pm\, imc^2$, one has the empirical energy-momentum conservation in a complex formula:

由于要有两个光子才可以转换为每一个质能 $E_n^{\mp} = \pm\, imc^2$，有光子的经验能动量守恒公式如下：

$$\hat{E}^2 = \hat{\mathbf{P}}^2 + 4m^2c^4 \;\rightarrow\; \left(\hat{\mathbf{P}} + i\hat{E}\right)\left(\hat{\mathbf{P}} - i\hat{E}\right) = 4E_n^+E_n^- \qquad (5.3.1)$$

$$\hat{E} = -\, i\hbar\partial_t \qquad \mathbf{P} = ic\,\hat{\mathbf{p}} \qquad \hat{\mathbf{p}} = -\, i\hbar\nabla \qquad (5.3.2)$$

known as the relativistic invariance relating a pair of intrinsic masses at their energy $\hat{E}$ and momentum $\hat{\mathbf{P}}$. As a duality of alternating actions $\hbar\omega \rightleftharpoons mc^2$, one operation $\hat{\mathbf{P}} + i\hat{E}$ is a process for physical reproduction or animation, while another $\hat{\mathbf{P}} - i\hat{E}$ is a reciprocal process for virtual annihilation or creation. They are governed by *Universal Topology*: $W = P \pm iV$, and comply with relativistic wave equation.

这就是著名的相对不变性，它将一对内在质量的能量 $\hat{E}$ 和动量 $\hat{\mathbf{P}}$ 联系了起来。作为交互作用的二象性 $\hbar\omega \rightleftharpoons mc^2$，一个 $\hat{\mathbf{P}} - i\hat{E}$ 操作是物理繁衍和盛生的过程，而另一个操作是虚拟湮灭或创生的对偶过程。它们受制于宇宙拓扑的协调 $W = P \pm iV$，并遵从相对论的波动方程。

Together, the above functions institutes conservation of wave propagation of the potential density fields:

上述函数共同构成势气密度场的波传播守恒：

$$\nabla^2\Phi_n - \frac{1}{c^2}\frac{\partial^2\Phi_n}{\partial t^2} = 4\frac{E_n^-E_n^+}{(\hbar c)^2}\Phi_n \qquad \because\ \Phi_n = \frac{1}{2}\left(\varphi_n^-\phi_n^+ + \varphi_n^+\phi_n^-\right) \qquad (5.3.3)$$

Therefore, besides the (5.3.1), we demonstrate an alternative approach to derive and amend the *Klein–Gordon* equation, introduced in 1926 or manifestly *Lorentz* covariant symmetry described as that the feature of nature is integrated and independent of the orientation or the boost velocity of the laboratory through spacetime.

因此，除了方程 (5.3.1) 之外，我们还演示了另一种方法来推导和修正1926年引入的克莱因-戈尔登方程和洛伦兹协变对称性，这种对称性被描述为自然界的一个整体特征，不依赖于实验室在时空中的运行方向或幅度的速度方向。

4. 熵面积流 Entropy of the area Fluxions

A measure of the specific operations of ways is called entropy in which states of a universe system could be arranged and balanced towards its equilibrium. The total entropy $\mathcal{S}^{\pm}$ represent law of conservation of area commutation and defined by the following commutations. For a triplet quark system, the blackhole entropy $\mathcal{S}_A$ is at $\sum 2\varphi_a^{\pm}(\phi_b^{\mp}+\phi_c^{\mp}) \approx 4\varphi_a\phi_{b/c}$, which is about four times of the area entropy for the wave emission

一种测量具体操作的度规方法称为熵，熵表达的是宇宙系统的状态可以按照其趋于稳定的平衡和排列。总熵 $\mathcal{S}^{\pm}$ 表示面积对易守恒的定律，由以下对易来定义。对于一个三重态夸克系统，黑洞的熵 $\mathcal{S}_A$ 是 $\sum 2\varphi_a^{\pm}(\phi_b^{\mp}+\phi_c^{\mp}) \approx 4\varphi_a\phi_{b/c}$，大约是波发射面积熵的四倍

$$\mathcal{S}_a = \mathcal{S}^{+} + \mathcal{S}^{-} = 4\mathcal{S}_A \qquad : \sum 2\varphi_a^{\pm}(\phi_b^{\mp}+\phi_c^{\mp}) \approx 4\varphi_a\phi_{b/c} \qquad (5.4.1a)$$

$$\mathcal{S}^{\pm} = \kappa_s\left[\hat{\partial}_\lambda\hat{\partial}_\lambda, \check{\partial}^\lambda\check{\partial}^\lambda\right]^{\pm} \qquad (5.4.1b)$$

where κ_s is factored by normalization of the potential fields for a pair of the world planes. As an operational duality, the entropy tends towards both extrema alternately to maintain a continuity of energy conservations, operated by each of the opponent *World Plane.* When a total entropy decreases, the intrinsic order, or Y^- development, of virtual into physical regime $\hat{\partial}_\lambda\hat{\partial}_\lambda$ is more dominant than the reverse process. This philosophy states that for the central quantity of *Motion Dynamics,* conversely, when a total entropy increases, the extrinsic disorder, or Y^+ annihilation $\check{\partial}^\lambda\check{\partial}^\lambda$, becomes dominant and conceals physical resources into virtual regime. For an observation at long range, the commutation becomes a conservation of the Y^-Y^+ thermodynamics, or is known as blackhole radiations, which yields law of the *Area Entropy* of the dual manifolds on the world planes.

其中，κ_s 是通过一对世界平面势气场的归一化来作为计算因子。作为一个对偶操作，熵交替地趋向于两个极值，以保持能量守恒的连续性，由各对偶在世界平面上进行操作。

当总熵减小时，虚态向物态 $\hat{\partial}_\lambda\hat{\partial}_\lambda$ 阴 Y^- 有序的发展逆于更为明显。相反地，从哲理上看，对于运行动态学的总量来说，当总熵增加时，外部无序或 Y^+ 湮灭 $\check{\partial}^\lambda\check{\partial}^\lambda$ 成为优势，将物理资源化归到虚拟状态中。在长程观测到对易作用形成的 Y^-Y^+ 热力学守恒，即著名的黑洞辐射，是遵守世界平面上双流形的熵面积定律。

In reality, the above flux-continuities are a pair of virtual and physical energies in each of the asymmetric entanglements to give rise to the strong forces at higher horizons of *SU*(2) and *SU*(3). Therefore, under a trace of the diagonalized tensors, we can represent a pair of the *Lagrangians* as a duality of the area flux-continuities:

在现实中，上述表达的是每一对协称纠缠中，虚能和物态能的通量连续性，它们在更高的 *SU*(2) 和 *SU*(3) 能级上产生强力。因此，在对角化张量的迹下，我们可以用一对拉格朗日方程来表示对偶的面积通量连续性：

$$\mathscr{L}^{\pm SU1}_{Flux} \equiv \Diamond^\pm_n = 2\frac{E^\pm_n E^\pm_n}{(\hbar c)^2}\Phi^\pm_n \qquad : \Phi^\pm_n = \varphi^\mp_n \phi^\pm_n \qquad (5.4.2)$$

$$\mathscr{L}^{SU1}_{Flux} = \Diamond^+_n + \Diamond^-_n = 4\frac{E^\mp_n E^\pm_n}{(\hbar c)^2}\Phi_n \qquad : \Phi_n = \frac{1}{2}\left(\Phi^+_n + \Phi^-_n\right) \qquad (5.4.3)$$

The area flow of energy, $4E^+_n E^-_n/(\hbar c)^2$, represents a pair of the irreducible density units $E^-_n E^+_n$ that exists alternatively between the physical-particle E^-_n and virtual-wave E^+_n states.

能量面积流 $4E^+_n E^-_n/(\hbar c)^2$ 表示了物态子 E^-_n 能量和虚波子 E^+_n 能态之间交替存在着一对不可约能量密度单位 $E^-_n E^+_n$。

External to observers at constant speed, a system is describable fully by the coherent entropy $\mathscr{S}_a$ of blackhole radiations to represent the law of conservation of the area fluxions or the time-invariance. As a total energy density travelling on the two-dimensional word planes $\{\mathbf{r} \pm i\mathbf{k}\}$, it is equivalent to a fluxion of blackhole density scaling at entropy $\mathscr{S}_a$ of an area flux continuity (5.4.3) for the potential radiations in a free space or vacuum, or the law of conservation of the area fluxions, named as ***Area Fluxions of Entropy***:

从外观等速场景来看，用黑洞辐射的相干熵 $\mathcal{S}_a$ 可以充分描述面积流守恒定律或时间不变性。作为在二维平面上$\{\mathbf{r} \pm i\mathbf{k}\}$运行的总能量密度，它相当于自由空间或真空中，势气能辐射的通量面积连续性 (5.4.3) 为熵$\mathcal{S}_a$的黑洞密度流，即，面积通量守恒定律，成为**面积熵通量**：

$$S_A = 4\frac{E_n^- E_n^+}{(\hbar c)^2}\Phi_n \tag{5.4.4}$$

It illustrates that it is the intrinsic radiance of its potential elements that are entangling and transforming between physical and virtual instances. The potential density Φ_n transports as the waves, conserves to the constant energies, carries the potential information, and maintains its continuity states of the area density. Essentially, the entangling bounds on an area entropy S_A in radiance propagating long-range of energy fluxions, before embodying the mass enclave and possessing the extra two-degrees of freedom.

它说明了，势气场元素的辐射本质是物态和虚态事例之间的纠缠和转换。势气场密度 Φ_n 以波的形式传输，守恒于能量连续性，携带着势气能的信息，维持其面密度的连续状态。从本质上讲，辐射面积熵 S_A 的纠缠受限于远程能量流传播的边界，然后，进驻具有两个额外自由度的质量飞地。

5. 时空度规 Spacetime Metric

Giving rise from the second horizon to the third horizon, the events of world lines evolute into the four-dimensional spacetime manifolds. At the third horizon, given rise to the freedom of the extra rotations, the world planes are further evolved into *Spacetime* manifolds, where the torque fields are transited to gravitational forces with a central-singularity.

由第二层界到第三层界，事件在世界线上就演化为四维时空流形，这是考虑到旋转的额外自由度，使得世界平面进一步演化为第三层界的时空流形，从而，扭矩场转化为具有中心奇异点的引力场。

As a part of the *Spacetime Evolution*, a spacetime of the third horizon is manifested and given rise from the second horizon to gain the extra freedom and evolution into three-dimensions of a physical space. The event operation of evolution is mathematically describable through transitioning functions from the tilde-zeta-matrices of the first horizon to the zeta-matrices $\tilde{\zeta} \mapsto \zeta$ of the second horizon, to the *Lorentz*-matrices $\zeta \mapsto L_{\nu}^{\pm}$ (4.11.6-7) of the third horizon. Dependent on their $Y^{-}Y^{+}$ commutations or continuities through the tangent curvatures of potentials, the entangling processes develop the dark fluxions of fields, forces and entanglements to evolve the physical spacetime, prolific ontology, and eventful cosmology.

作为时空演化的一个部分，第三层界的时空是在第二层界上提升和显现，通过获得额外自由度，演化成三维物理空间。演化的事件操作可以通过从第一层界的 $\tilde{\zeta}$ 矩阵到第二层界的泽塔-矩阵 $\tilde{\zeta} \mapsto \zeta$ ，到第三层界的洛伦兹矩阵 $\zeta \mapsto L_{\nu}^{\pm}$ (4.11.6-7) 的转换函数，用数学完整地描述。纠缠过程依赖于它们通过势气场切线曲率的 $Y^{-}Y^{+}$ 对易和连续性，进一步发展出场、力和纠缠的暗流动，从而，演化出物态时空，形成丰富的本体论，和充盈盛事的宇宙学。

The metric solution for spacetime is exterior to a spherically symmetric, static body of radius r_s and mass M. Therefore, spacetime is limited at the scope of $r > r_s$ where energies are embodied as or enclaved in the physical massive objects. In order words, the events on the world lines are massless for the spacial $r \le r_s$ regime under two-dimensional world planes. To the pure physical observations, during the inauguration of mass enclave at the third horizon, it appeared as if there were from nothing at the second horizon, fluxions of the superphase entanglement exert magically the gravity fields in a spacetime manifold.

时空的度规解是在半径为r_s和质量为M的对称静态球体之外的，因此，时空被限制在$r > r_s$的范围，在那里能量被体现为或包裹在物理大质量的物体中。换句话说，在二维世界平面下，空间$r \le r_s$体制中，世界线上的事件是无质量的。对纯物态观察来说，在第三层界物质飞地的形成过程中，第二层界看起来似乎什么都没有，然而，宫位纠缠的流动在时空流形中，却神秘地施展了重力场。

Introduced in the 1920s, the *Friedmann–Lemaître–Robertson–Walker* (FLRW) metric attempts a solution of *Einstein's* field equations of general relativity. Aimed to the gravitational inverse-square law, the research discovered that the desired outcome leads to the polar coordinates on a world plane:

20世纪20年代引入了弗里德曼-勒马-特雷-罗伯逊-沃克 (FLRW) 度规，试图求解爱因斯坦广义相对论的场方程。针对引力平方反比定律，研究发现期望的结果会导致世界平面上的极坐标，如下：

$$\mathrm{d}\Sigma^2 = \mathrm{d}r^2 + S_k(r)^2\,\mathrm{d}\vartheta^2 \qquad \because \mathrm{d}\vartheta^2 = \mathrm{d}\theta^2 + \sin^2\theta\,\mathrm{d}\phi^2 \tag{5.5.1}$$

$$S_k(r) = r\,\mathrm{sinc}(r\sqrt{k}) = \begin{cases} \sin\left(r\sqrt{k}\right)/\sqrt{k}, & k > 0 \\ r, & k = 0 \\ \sinh\left(r\sqrt{|k|}\right)/\sqrt{k}, & k < 0. \end{cases} \tag{5.5.2}$$

Apparently, it represents the virtual ($k < 0$) and physical ($k > 0$) of the “hyperspherical coordinates” bridged by the polar coordinate system ($k = 0$), which emerges into the third horizon to gain the extra two-coordinates. Therefore, it evidently supports a proof to our full description of the evolutionary process coupling the horizons between the two-dimensional *World Planes* and the three-dimensional physical spacetime manifold.

显然，它代表了极坐标系 $(k > 0)$ 所桥接的“超球坐标”的虚态 $(k < 0)$ 和物态 $(k > 0)$ 领域，它们出现在第三层界以获得两个额外坐标。因此，它显然支持我们对二维世界平面和三维物理时空流形之间，层界耦合演化过程的完整描述。

Analytic solutions of Einstein's equations of General Relativity are hard to come by. It's easier in situations that exhibit symmetries. In 1916, *Karl Schwarzschild* sought the metric describing the static, spherically symmetric spacetime surrounding a spherically symmetric mass distribution. A static spacetime is one for which there exists a time coordinate such that

要得到爱因斯坦广义相对论方程的解析解是很困难的，只是在呈现对称性的情况下显得容易一些。1916年，卡尔·施瓦辛格寻求描述围绕着球对称质量分布的静态球对称时空的度规，发现静态时空是一个存在时间坐标的时空

(i) All the components of $g_{\mu\nu}$ are independent of time events

所有组成部分都与时间事件无关

(ii) The line element ds^2 is invariant under the entanglement $\pm ict$

世界线元 ds^2 在 $\pm ict$ 纠缠下的不变性

A spacetime that satisfies (i) but not (ii) is called stationary. An example is a rotating azimuthally symmetric mass distribution. The metric for a static spacetime has the expressions

满足 (i) 但不满足 (ii) 的时空称为是静止的，旋转方位对称质量分布就是一个例子，静态时空的度规有以下表达式

$$ds^2 = A(r)c^2dt^2 - d\mathbf{l}^2 \qquad \mathrm{d}\mathbf{l}^2 = B(r)dr^2 + r^2(\mathrm{d}\theta^2 + \sin^2\theta\,\mathrm{d}\phi^2) \tag{5.5.3}$$

where $\mathrm{d}\mathbf{l}^2$ is a time independent spatial metric. Cross-terms are missing because their presence would violate condition (ii). To preserve spherical symmetry, $\mathrm{d}\mathbf{l}^2$ can be distorted from the flat-space metric only in the radial direction. In flat space, the r is the distance from the origin and $4\pi r^2$ is the area of a sphere. Considering the week gravity obeys newton's gravity law, the *Schwarzschild* metric is derive as

其中，$d\mathbf{l}^2$ 是与时间无关的空间度规。各交叉项丢失，因为它们的存在违反了条件 (ii) 。为了保持球面对称性，$d\mathbf{l}^2$只能从平面空间度规中沿径向扭曲。在平面空间中，*r* 是距原点的距离，$4\pi r^2$ 是球体的面积。考虑到弱引力服从牛顿引力定律，施瓦辛格导出度规为

$$A(r) = 1 - \frac{r_s}{r} \qquad B(r) = 1/A(r) \qquad : r_s = \frac{2GM}{c^2} \tag{5.5.4}$$

The *Schwarzschild* metric describes any spherically symmetric spacetime at the third horizon outside the mass-energy distribution $r > r_s$, even if the distribution moves. Therefore, r is known as the area distance. As $r \to \infty$, the metric becomes *Minkowskian* or known as asymptotic flatness. The measuring distances at "collapsed" states for the *Sun* at r_s=2.9km and the *Earth* at r_s=0.88 cm imply the *Sun* is the resources of energy supplier.

施瓦辛格度规适用于在第三层界的质能量分布 $r > r_s$ 之区域的任何对称球时空，包括该区域分布发生了移动，所以，r 被称为面积距离。当$r \to \infty$时，度规变为闵可夫斯基或称为渐近平坦度，由此"塌缩"状态下测量的太阳的球半径是 r_s=2.9km，而地球的球半径在 r_s=0.88cm，表明太阳是能源的提供者。

Schwarzschild metric violate violate condition (ii) because the cross-terms of the life entanglements are missing or set the cosmical matrix as a constant metric in Einstein's equations of General Relativity. Obviously, since *Schwarzschild* metric represents a static spacetime or physical stationary at the "collapsed" states, its scope is limited to the regime of classical physics or at the third or higher horizons. Only at the second or lower horizons, the nature has the mysterious life of dark energies. In a philosophical view, the dark energy lies at the heart of the fundamental nature of potential dualities, event operations, and the superphase modulations.

施瓦辛格度规违反了条件(ii)，这是因为在爱因斯坦的广义相对论方程中，将宇宙矩阵假设为常数度规，导致生态纠缠的交叉项完全丢失了。显然，由于施瓦辛格度规表示的是静态时空和处于"塌缩"状态的静止物理，其范围仅限于第三或更高的层界的经典物

理范畴。只有在第二或更低的层界中，大自然才有神秘生动的暗能量。从哲学的角度来看，暗能量的核心是势气场二象性、事件操作性和宫位调制性的自然本质。

6. 光子 Photon

Electromagnetic Radiation - A radiation consists of photons, the uncharged elementary particles with zero rest mass, and the quanta of the electromagnetic force, responsible for all electromagnetic interactions. Electric and magnetic fields obey the properties of massless superposition such that, for all linear systems, the net response caused by multiple stimuli is the sum of the responses that would have been caused by each stimulus individually. The matter-composition of the medium for the light transportation determines the nature of the absorption and emission spectrum. In 1900 Planck derived that an area entropy S_A of radiance of a blackbody is given by frequency ω_c at absolute temperature T.

电磁辐射 - 辐射是由静止质量为零不带电基本粒子的光子和负责所有电磁相互作用的量子电磁力所组成的。由于，电场和磁场服从无质量叠加的特质，对于所有线性系统，由多个激发引起的总响应是由每个次激发独引起效应的总和。光传输介质的事态组成决定了吸收光谱和发射光谱的性质。1900年，普朗克推导出黑体辐射的面积熵 S_A 可以由频率 ω_c 和绝对温标 *T* 给出。$\rho^- \approx \phi_0^- \varphi_0^+ = 2\frac{m\omega}{\pi\hbar} exp\left[-\frac{m\omega}{2\hbar}(r_s^2 + r_w^2)\right]$

$$S_A(\omega_c, T) = \frac{\hbar\omega_c^3}{4\pi^3 c^2 k_B T}\left(e^{\hbar\omega_c/k_B T} - 1\right)^{-1} \simeq \frac{\omega_c^2}{4\pi^3 c^2} \qquad (5.6.1)$$

Expressed as an energy distribution of entropy, it is the unique stable radiation in quantum electromagnetism. Planck's theory was originally based on the idea that blackbodies emit light (and other electromagnetic radiation) only as discrete bundles or packets of energy: photons. Therefore, the above formula is applicable to generate *Photon*s in electromagnetic radiation.

表现为熵的能量分布，它是量子电磁学中独特的稳定辐射。普朗克的理论最初是基于这样一种观点：黑体只以离散的能量束或能量包 (光子) 的形式发射光 (和其他电磁辐射) 。因此，上述公式适用于产生光子的电磁辐射。

As a fluxion flow of light, it balances statistically at each of the states $E_n^{\mp}: mc^2 \rightleftharpoons \hbar\omega$, where $\hbar\omega$ is known as the *Planck* matter-energon, introduced in 1900. Therefore, at a minimum, light consists of two units, a pair of *Photons*. For a total of mass-energy $4m^2c^4$, the equation presents a conservation of photon energy-momentum and relativistic invariance. Because the potential fields on a pair of the world planes are a triplet quark system at $2\varphi_a^+(\phi_b^- + \phi_c^-) \approx 4\varphi_a^+\phi_{b/c}^-$, it is about four times of the density for the wave emission. Applicable to the equation of conservation above and mass annihilation (4.12.6), an area energy fluxion of the potentials is equivalent to the entropy of the electro-photon radiations in thermal equilibrium and mass annihilation:

作为一种光的流数，它在每一个态上都有统计上的平衡置 $E_n^{\mp}: mc^2 \rightleftharpoons \hbar\omega$，其中，$\hbar\omega$ 被称为的普朗克物态能量子，于1900年引入。因此，光至少由两个单元组成：一对光子。对于总量质能 $4m^2c^4$，上述方程给出了光子能动量守恒和相对不变性。由于一对世界平面上的势气场是一个三态夸克系统

$$2\varphi_a^+(\phi_b^- + \phi_c^-) \approx 4\varphi_a^+\phi_{b/c}^- \qquad (5.6.2)$$

它是波发射密度的四倍。应用于上述守恒方程和质量湮灭 (4.12.6) 方程，势气能的面积能量流等于热平衡和质量湮灭时的光子辐射熵：

$$S_{A1}(\omega_c, T) = 4\left(\frac{\omega_c^2}{4\pi^3c^2}\right) = \eta_c\left(\frac{\omega_c}{c}\right)^2 \qquad : \eta_c = \pi^{-3} \qquad (5.6.3)$$

where the factor 4 of the first entropy is given by (5.4.1) that has compensated to account for one blackbody with the dual states at minimum of two physical Y^- and one virtual Y^+ quarks. Apparently, the efficiency of electromagnetic radiation at $\eta_c = \pi^{-3}$ is trivial for a blackhole to emit photons.

其中，第一熵的因子4由 (5.4.1) 给出，该因子已补偿为一个黑体，其双态至少为两个物理 Y^- 夸克和一个虚拟 Y^+ 夸克。显然，电磁辐射效率 $\eta_c = \pi^{-3}$ 对黑洞发射光子来说是很微小的。

Horizon Energy Radiation - In a free space or vacuum for the mass enclave of equation (4.12.6), an area density is equivalent to the entropy of the dark radiations in thermal equilibrium during the mass acquisition or annihilation:

层界能量辐射 - 在自由空间或真空中， 对于方程 (4.12.6) 的质量飞地，其面密度等于处于质量获取或湮灭的热平衡过程中所辐射的熵：

$$S_{A2}(\omega_c, T) = 2\frac{m\omega_c}{\pi\hbar} = \eta_h\left(\frac{\omega_c}{c}\right)^2 \qquad : \eta_h = \frac{2}{\pi}, mc^2 \rightleftarrows \hbar\omega_c \qquad (5.6.4)$$

Remarkably, the Horizon Radiation $\eta_c = 2/\pi = 63.7\,\%$ implies that the even operational radiations emit photons at approximately 2/3 ratio. To our expectation, this corresponds exactly to the maximum efficiency for the triplet-quark capable to emit ta pair of photon energies.

值得注意的是，层界辐射 $\eta_c = 2/\pi = 63.7\,\%$ 寓意着：事件操作的辐射大约以 2/3 的比率发射光子。与我们的预期相符，这正好对应于三态夸克能发射光子能量对的最大效率。

Associated with the equation of (5.4.4), a summation of the above equivalences results in the total entropy to derive a pair of the complex formulae, known as photon:

总结上述导致总熵的等价方程组，可以进一步由(5.4.4)方程，获得一对称为光子复变公式：

$$S_A(\omega_c, T) = S_{A1}(\omega_c, T) + S_{A2}(\omega_c, T) = (\eta_c + \eta_h)\left(\frac{\omega_c}{c}\right)^2 \mapsto 4\frac{E_c^- E_c^+}{(\hbar c)^2} \qquad (5.6.5)$$

$$E_c^{\pm} = \mp\frac{i}{2}\hbar\omega_c \qquad \eta_c = \pi^{-3} = 3.22\,\% \qquad \eta_h = \frac{2}{\pi} = 63.7\,\% \qquad (5.6.6)$$

Introduced at 20:00 August 19 of 2017, the coupling constant at η_c or η_h implies that the triplet quarks institute a pair of the photon energies $\mp i\hbar\omega_c/2$ for a blackhole to emit light, dominantly. Accompanying lightwave radiation, it reveals that dark energy can be transformed to (creation) or emitted by (annihilation) the triplet quarks: an electron, a positron and a gluon.

上式于2017年8月19日20:00引入，耦合常数 η_c 或 η_h 意味着三重夸克为黑洞发射光子提供的一对光子能量各为：$\mp i\hbar\omega_c/2$。伴随着光波辐射，它揭示了暗能量可以由三重夸克转化 (创造)为电子、正电子和胶子，或 发射 (湮没) 为光子。

7. 光子守恒 Conservation of Light

As the remarkable nature of virtual energy, besides the primary properties of visibility, intensity, propagation direction, wavelength spectrum and polarization, the light is equivalent to two photons and can be characterized by the law of conservation, shown by the chart.

由于虚能量的奇异性质，除了可见度、强度、传播方向、波长谱和偏振等基本性质外，还可以用守恒定律来表征光，这里光与二个光子等价，如表所示。

Law of Conservation of Light 光守恒定律

1. *Light remains constant and conserves over time during its transportation.*
   光在随时间运输过程中保持恒定并守恒。
2. *Light consists of virtual energy duality as its irreducible unit: the photon.*
   光以虚能二象性为其不可约单位：光子。
3. *A light energy of potential density neither can be created nor destroyed.*
   光能势气场密度既不能产生也不能消亡。
4. *Light has at least two photons for entanglement with zero net momentum.*
   光至少有两个光子作净动量为零的纠缠。
5. *Light transports and transforms a duality of virtual wave and real object.*
   光传输和转换呈现二象性的虚波和实体。
6. *Without an energy supply, no light can be delivered to its surroundings.*
   没有能量源，任何光都无法在周围传播。
7. *Light transforms from one form to another carrying potential messages.*
   光从一种形式转换到另一种并传递信息。
8. *Light is convertible to or emitted by triplets: electron, positron and gluon.*
   光可转换或激发成电子、正电子和胶子。
9. *The net flow across a region is sunk to or drawn from physical resources.*
   净流数量通过一个区域产生或化归物源。

表 *5.7.1 Law of Conservation of Light* 光守恒定律

In summary, photon exhibits wave–particle duality, propagates under $Y^{-}Y^{+}$ entanglements, and obeys *Law of Conservation of Light*. It is mediated by inertial boost for transformation and behaves like a particle with definite and finite measurable position or momentum, though not both at the same time. A pair of photons can be emitted by wave objects, transported massless without electric charge, absorbed in photon amounts, refracted by an object or interfered with themselves.

总之，光子具有波粒二象性，在 $Y^{-}Y^{+}$ 纠缠下传播，并遵循光的守恒定律。它是由转换的惯性幅度助导的，表现为一个具有确定和有限可测位置或动量的波子，但不是同时具有这两个性质。一对光子可以由质量物体发射，无质量无电荷传输，被光子吸收，被物体折射或干扰。

8. 引子 Graviton

Gravitation exhibits wave–particle duality such that its properties must acquire characteristics of both virtual and physical particles. Inherent to the blackhole thermal radiance, gravitational fluxion (5.3.3) has the transportable commutation of area entropy S_A and conservable radiations of a *Schwarzshild* blackbody (5.5.4) with radius $r_s = 2GM/c^2$, derived in 1916. An area entropy S_A of the quantum-gravitational radiance is given by frequency at an absolute temperature *T* and constant speed c_g as the following:

引力显现的波粒二象性时，它的性质必须同时具有虚态子和物态子的特征。隐含于黑洞热辐射，引力流 (5.3.3) 具有1916年施瓦辛格导出的面积熵 S_A 的传输对易性，以及半径为 $r_s = 2GM/c^2$ 的黑体 (5.5.4) 的守恒辐射性。量子引力辐射的面积熵 S_A 由绝对温度 *T* 和恒定速度频率 c_g 给出，如下所示：

$$S_A(\omega_g, T) = \frac{c_g^3}{4\hbar G} \tag{5.8.1}$$

where G is the gravitational constant, known as *Bekenstein-Hawking* radiation, introduced in 1974. This formula is applicable to generate *Graviton* in gravitational radiations. It is equivalent to associate the above radiation with the equation (5.4.4) as the following:

其中，*G* 引力常数。这就是1974年引入的称为 Bekenstein-Hawking 辐射，这个公式适用于一对引子产生的辐射场，将上述辐射与 (5.4.4) 公式联系起来：

$$S_A(\omega_g, T) = 4\left(\frac{c_g^3}{4\hbar G}\right) = 4\frac{E_g^- E_g^+}{(\hbar c_g)^2} \qquad \to E_g^{\pm} = \mp\frac{i}{2}\sqrt{\hbar c_g^5/G} \tag{5.8.2}$$

where the number 4 is factored for a dual-state system, given by (5.4.1). Consequently, the gravitational energies $E_g^{\pm}$ contain not only a duality of the complex functions but also a pair of the irreducible unit: ***Graviton***, introduced at 21:30 November 25 of 2017, resulting in a pair of graviton units:

式中，4是双态系统的对偶系数，由 (5.4.1) 给出。因此，引子能 $E_g^{\pm}$ 不仅包含复函数的对偶性，而且还包含一对不可约的单位：**引子**，于2017年11月25日21:30引入，从而导出一对引子的单位值：

$$E_g^{\pm} = \mp \frac{i}{2} E_p \qquad : E_p = \sqrt{\hbar c_g^5 / G} \qquad (5.8.3)$$

where E_p is the *Planck* energy. For the blackhole emanations, a coupling constant 100% to emit gravitational radiations implies that graviton is a type of dark energies accompanying object radiations as a duality of the reciprocal or driven resources. At a minimum, the blackhole emanation, conservation of momentum, or equivalently transportation invariance (4.4.1-2) require that at least a pair of gravitons is superphase-modulated for entanglements transporting at their zero net momentum.

这里，$E_g^{\pm}$ 是 普朗克能量。对于黑洞辐射，引子辐射的耦合常数为100%发射，意味着引子是自始至终伴随目标模块辐射的一种暗能量，具有对偶资源的二象驱动性。一般情况下，要满足黑洞发射、动量守恒或等效运通不变性 (4.4.1-2)，至少有一对引子在宫位位调制下，其输运净动量为零。

Similar to a pair of photons emitted by dark energy, the nature of graviton is associated with the superphase modulation of the Y^-Y^+ energy or dark energy entanglement for all particles. In the center of entanglement, the colliding duality has no net momentum, whereas gravitons always have the temperature sourced from their spiral torques and modulated by superphase of the nature, especially near the astronomical orbits of stars. This explains why there exists the thermal background radiations in the universe.

与暗能量发射的一对光子相类似，引子的性质与所有粒子的 Y^-Y^+ 能量或暗能量纠缠的宫位位调制有关。其纠缠的核心是对偶性碰撞净动量为零，由于它们螺旋扭矩作用，尤其是在接近恒星的天文轨道上，引子总是有温度作用，并受自然的宫位调制。这就解释了为什么宇宙中存在热背景辐射。

9. 引力场守恒 Conservation of Gravitation

Similar to acquisition of *Law of Conservation of Light*, we represent the characteristics of gravitation, shown by the chart. Under the superphase modulations, the feature of nature is independent of the orientation, the boost transformation or spiral torque invariance throughout the world lines.

类似于获得光守恒定律，我们用下表来阐明引力的特性。在宫位位调制的整个世界线上，这些自然特征与取向、幅度变换或螺旋扭矩不变性无关。

Law of Conservation of Gravitation 引力场守恒定律

1. *Gravitation is operated by torque interweave and carries superphase messages.*
   万有引力是转矩交互用作，并携带宫位信息。
2. *Gravitation remains constant and conserves over time during its entanglements.*
   引力在随时间纠缠过程中保持不变并且守恒。
3. *A gravitation energy of potential density neither can be created nor destroyed.*
   引力能的势气能密度既不能产生也不能消亡。
4. *Gravitation transports in wave formation virtually and acts on objects physically.*
   引力以波形式进行传输，以实体作用于目标。
5. *Without an energy supply, no gravitation can be delivered to its surroundings.*
   没有能量源，任何引力波都无法在周围传播。
6. *Gravitation consists of an energy duality as the irreducible complex gravitons.*
   引力是由一对能量不可约的复数引子所构成。
7. *Gravitation has at least two gravitons for entanglement at zero net momentum.*
   引力至少有两个引子处于净动量为零的纠缠。
8. *The net fluxion across a region is sunk to or drawn from physical resources.*
   净引力流数量通过区域之间产生或化归物源。
9. *External to objects, gravity is inversely proportional to a square of the distance.*
   处于外部目标块，重力与距离的平方成反比。

Together with law of conservation of light, the initial state of the universe is conserved or invariant at the horizon where the inception of the physical world is entangling with and operating by the virtual supremacy. As an area density streaming, gravitational fields are superposing potentials and interweaving entanglements that might be interfered with themselves under certain situations.

与光的守恒定律一起，宇宙的初始状态具有守恒性或不变性，虚态优势的纠缠， 形成一种面密度流， 操作着物理世界的开源层界，引子场是宫位势气场和交互纠缠，在某些场景，它们也可能自相干涉。

10. 统计熵 Statistical Entropy

During the formation of the horizons, movements of macro objects undergo interactions with and are propagated by the Y^+ commutative fields, while events of motion objects are characterized by the Y^- continuity dynamics. Under the formations of the ground horizons, the Y^-Y^+ dynamics of the symmetric system aggregates timestate objects to develop thermodynamics related to bulk energies, statistical works, and interactive forces at the third horizon towards the next horizon of macroscopic variables for processes and operations characterized as a massive system, associated with the rising temperature.

在此层界形成的过程中，宏观物体的运动是在与 Y^+ 对易场下的相互作用和传播，而运动物体事件则具有 Y^- 连续性动态学表征。在基础层界的形成过程中，对称系统的 Y^-Y^+ 动态学聚合了时态模块，发展出与体积能、统计功率和第三层界相互作用力有关的热力学，并趋于发展和运作更高层界的宏观变量，形成一个与温升有关的大系统特征。

For a bulk $\langle W_0^\pm \rangle$ system of *N* particles, each is in one of three possible states: Y^- |-〉, Y^+ |+〉, and neutral |o〉 with their energy states given by E_n^-, E_n^+ and E_n^o, respectively. If the bulk system has $N_n^\pm$ particles at non-zero charges and $N^o = N - N_n^\pm$ neutrinos at neutral charge, the interruptible energy of the internal system is $E_n = N_n^\pm E_n^\pm$. The number of states $\Omega(E_n)$ of the total system of energy E_n is the number of ways to pick $N_n^\pm$ particles from a total of *N*,

对于由 *N* 个粒子组成 $\langle W_0^\pm \rangle$ 的体系统，每一个粒子都处于三种可能的状态中的一种： 阴Y^-|-〉, 阳Y^+ |+〉, 和中性 |o〉，其能量状态分别由 E_n^-, E_n^+ 和 E_n^o 给出。如果体系统中有非零电荷的 $N_n^\pm$ 粒子和中性电荷的 $N^o = N - N_n^\pm$ 中微子，则系统内部的可作用或可测能量为 $E_n = N_n^\pm E_n^\pm$。系统总能量 E_n 的态数 $\Omega(E_n)$ 是从 *N* 的总和中选取 $N_n^\pm$ 粒子的方法数，

$$\Omega(E) = \prod \Omega(E_n) = \prod \frac{N!}{N_n^{\pm}!(N - N_n^{\pm})!} \qquad : N_n^{\pm} = \frac{E_n}{|E_n^{\pm}|} \tag{5.10.1}$$

and the entropy, a measure of state probability, is given by

由此，用于度规状态概率的熵，可以表述为：

$$S(E) = \sum_n S(E_n) = -k_B \sum_n \log \frac{N!}{(N_n^{\pm})!(N - N_n^{\pm})!} \tag{5.10.2}$$

where k_B is *Boltzmann* constant. For large N, there is an accurate approximation to the factorials as the following:

其中，k_B 是玻尔兹曼常数。对于大数量 *N*，阶乘可以被精确地近似为如下方程：

$$log\,(N!) = N\,\log(N) - N + \frac{1}{2}\log(2\pi N) + \mathfrak{R}(1/N) \tag{5.10.3}$$

known as the *Stirling's* formula, introduced 1730s. Therefore, the entropy is simplified to:

称为斯特林公式，于1730年引入。因此，熵被简化为：

$$S(N_n^{\pm}) = -N\Big[k_{B_1}\Big(1 - \frac{N_n^{\pm}}{N}\Big)\log\Big(1 - \frac{N_n^{\pm}}{N}\Big) + k_{B_2}\frac{N_n^{\pm}}{N}\log\Big(\frac{N_n^{\pm}}{N}\Big)\Big] \tag{5.10.4}$$

Generally, one of the characteristics of a bulk system can be presented and measured completely by the thermal statistics of energy k_BT such as a scalar function of the formless entropy above. In a bulk system with intractable energy $E_n^{\pm}$, its temperature can be easily measured and arisen by decrease of its entropy as the following:

一般来说，一个系统体的特征可以完全用热统计能量 k_BT 来表示和测量，犹如上面标量函数的熵。在不易处理的能量 $E_n^{\pm}$ 体系统中，其温度是极易测量，并随熵减而增，如下所示：

$$\frac{1}{T} \equiv \sum_n \frac{\partial S_n}{\partial E_n} = \sum_n \frac{\mp i k_{B_n}}{E_n^{\pm}} \log\Big(\frac{NE_n^{\pm}}{E_n} - 1\Big) \quad : k_BT \in (0, \pm\, iE_n^{\pm}) \tag{5.10.5}$$

With a bulk system of n particles, it represents that both energies $E_n^{\pm}(T)$ and horizon factor $h_n(T)$ are temperature-dependent.

对于由 n 个粒子组成的大系统，它的能量 $E_n^{\pm}(T)$ 和层界因子 $h_n(T)$ 都与温度有关。

$$E_n = NE_n^{\pm}h_n = \frac{NE_n^{\pm}}{e^{\pm iE_n^{\pm}/k_BT}+1} = k_BTN_n^{\pm}\log\left(\frac{N}{N_n^{\pm}}-1\right) \tag{5.10.6}$$

Apparently, the horizon factor is given rise to and emerged as the temperature T of a bulk system. During processes that give rise to the bulk horizon, the temperature emerges in form of energy between zero and $k_BT \simeq E_n^{\pm}$, reproducing the n particles balanced at their population $N_n^{\pm}$. Remarkably, the horizon factor is simplified to:

显然，层界因子是形成和显现为系统的体温度 *T*。在产生层界体积的过程中，温度以能量的形式出现在零到 $k_BT \simeq E_n^{\pm}$ 之间，重构其 *n* 粒子在 $N_n^{\pm}$ 族群中的平衡态。值得注意的是，层界因子可以被简化为：

$$h_n^{\pm} = \frac{N_n^{\pm}}{N} = \frac{1}{e^{\pm\beta E_n^{\pm}}+1} \qquad : \beta = \frac{i}{k_BT} \tag{5.10.7}$$

where i presents that the temperature k_BT is a virtual character, the reciprocal of which, $\beta = i/(k_BT)$ is similar to the virtual time dimension ict.

其中，i 是一个具有虚数特征的值， 温度不仅是虚拟的，而且其倒数 $\beta = i/(k_BT)$ 与虚拟时维 ict 相似。

11. 玻耳兹曼分布 Boltzmann Distribution

Fundamental to the statistical mechanics, we recall that all accessible energy states are equally likely. This means the probability that the system sits in state |n⟩ is just the ratio of this number of states to the total number of states, emerged and reflected in the (5.10.7) equations at the state probabilities, $p_n^{\pm} = p_n(h_n^{\pm})$, to form the macroscopic density and to support the equations of (3.7.1-8) by the following expression:

统计力学的基本原理是，所有可显现的能量状态都具有同等现实性。这意味着系统处于状态 |n⟩ 的概率只是该状态数与状态总数的比率，反映在 (5.10.7) 方程为状态概率 $p_n^{\pm} = p_n(h_n^{\pm})$ ，以此支持 (3.7.1-8) 方程所构成的宏观密度，并形成以下表达式：，

$$p_n^{\pm} = \frac{h_n^{\pm}}{\sum h_\nu} = \frac{e^{\pm\beta E_n^{\pm}}}{Z} \qquad : Z \equiv \sum\nolimits_\nu e^{\pm\beta E_\nu^{\pm}} = \frac{e^{\pm\beta E_\nu^{\pm}/2}}{1 - e^{\pm\beta E_\nu^{\pm}}} \qquad (5.11.1)$$

known as the *Boltzmann* distribution, or the canonical ensemble, introduced in 1877. The average energy in a mode can be expressed by the partition function:

这就是著名的玻尔兹曼分布，或规范系统，于1877年引入。模式中的平均能量可以用分配函数表示：

$$\tilde{E}^{\pm} = -i\frac{d\log(Z)}{d\beta} = \pm\frac{iE_n^{\pm}}{2} \pm \frac{iE_n^{\pm}}{e^{\pm\beta E_n^{\pm}} - 1} \qquad : E_n^{\pm} = \mp imc^2 \qquad (5.11.2)$$

As $T \to 0$, the distribution forces the system into its ground state at the lowest energy before transforming to the virtual world. All higher energy states have vanishing probability at zero temperature or the mirroring effects of infinite temperature.

当 T→0 时，在转换到虚态状态之前，此分布迫使系统以最低能量进入基态，所有较高能量状态在零温度下，具有消失概率，零温度相当于无限温度的镜像效应。

12. 化学势气场 Chemical Potentials

For a bulk system with the internal energy and the intractable energy of E_n, the chemical potential $\mu = -\sum \mu_n$ rises from the numbers of particles:

对于内能为 E_n 的大体积体系，由粒子数给出化学势气 $\mu = -\sum \mu_n$如下：

$$\mu^{\pm} = -\sum_n \left(\frac{\partial E_n}{\partial N_n^{\pm}}\right)_{S,V} = k_B T \sum_n \frac{1-\left(1-N_n^{\pm}/N\right)\log\left(N/N_n^{\pm}-1\right)}{\left(1-N_n^{\pm}/N\right)}$$
$$= -\sum_n \left[E_n^{\pm} - k_B T\left(1+e^{\pm\beta E_n^{\pm}}\right)\right] \qquad (5.12.1)$$

where μ^+ is named as the Y^+ chemical potential and μ^- as the Y^- chemical potential. Its heat capacity can be given by the following definition:

这里，μ^+ 是阳化学势，μ^- 是阴化学气。其热容量可由以下定义给出：

$$C_V^{\pm} \equiv \sum_n \left(\frac{\partial E_n}{\partial T}\right)_{V,N_n^{\pm}} = k_B \sum_n \frac{N\left(E_n^{\pm}\right)^2 e^{\pm\beta E_n^{\pm}}}{\left[k_B T\left(e^{\pm\beta E_n^{\pm}}+1\right)\right]^2} \qquad (5.12.2)$$

The maximum heat capacity is around $k_B T \to |E^{\pm}|$. As $T \to 0$, the specific heat exponentially drops to zero, whereas $T \to \infty$ drops off at a much slower pace defined by a power-law.

最大热容出现在 $k_B T \to |E_n^{\pm}|$ 附近。当T→0 比热指数式地下降到零时，而在 $T \to \infty$ 时，下降的速度比幂律定义要慢得多。

13. 量子分布 Quantum Distributions

Fermi Dirac statistics describes the statistical distribution of different quantum states in a system composed of a large number of fermions satisfying the Pauli exclusion principle in statistical mechanics. It is applicable to fermions (particles with semi odd spinors) under thermal equilibrium. As an internal state of a system, an integrity of the energy distribution function (5.10.5) and the change of chemical potentials (5.12.1) constitutes the famous Fermi Dirac statistical distribution:

费米-狄拉克统计是，统计力学中描述由大量满足泡利不相容原理的费米子组成的系统中，状态子分处于不同量子态的统计分布规律，适用对象是热平衡的费米子 (自旋量子数为半奇数的粒子)。一个系统内部状态的能量分布图 (5.10.5) ，加上化学势气 (5.12.1) 的变化，就构成了著名的费米–狄拉克统计分布：

$$h_n^{\pm} = \frac{1}{e^{\pm\beta E_n^{\pm} + i\beta\mu_n} + 1} \qquad : \ \beta = \frac{i}{k_B T}, \ E_n^{\pm} = \mp i\epsilon_n \qquad (5.13.1)$$

where ϵ_n is an energy level, introduced in 1926. In addition, when the energy is at timestate or heteromorphism (the second field where the virtual state and the real state coexist), the weak interaction between different states in the virtual system can be ignored by using this statistical law. Therefore, the distribution of different steady states can be described by a large number of macro-system with different micro-energy states with the 1/2 spin. The electron is the most common favorable object for Fermi Dirac statistics, composing an important part of quantum statistics.

其中，ϵ_n 为能级，于1926年引入。此外，能量处于异态（虚态与实态共存的第二场域）时，应用此统计规律，使得虚态系统中各异态之间弱相互作用可忽略不计，从而，在不同定态的分布状况来描述大量不同微观能态组成的宏观系统，自旋量子数为 1/2 的电子是费米–狄拉克统计最普遍的应用对象，也是量子统计的重要组成部分。

Bose-Einstein statistics is another famous statistical distribution, composed of the distributive function (5.11.2) among the average energy states in a system.

Considering the distributive change of chemical potential (5.12.1), it constitutes Bose-Einstein statistics as follows:

玻色-愛因斯坦统计是一个系统内各状态间平均能量分布图 (5.11.2) 再加上化学势气的分布变化，就构成了著名的玻色-愛因斯坦统计分布，如下：

$$h_n^{\pm} = \frac{1}{e^{\pm\beta E_n^{\pm} + i\beta\mu_n} - 1} \quad : \ \beta = \frac{i}{k_B T}, \ E_n^{\pm} = \mp i\epsilon_n \tag{5.13.2}$$

Bose-Einstein statistics is the average energy distribution for particles at an integer number of the spin states with their symmetric eigenvalues. At a certain energy level, it allows cohabitation of many bosons, which implies the energy is under the second horizon or timestate regime at cohesive states for a bi-directional commutative and transport between the virtual and physical states, commonly in forms of meson as an example. Therefore, they appear as at the physical state unstably and interruptive at strong forces.

玻色子从属于自旋为整数的量化状态子，具有本征波函数的对称性，在玻色子的某一个能级上，可以容纳多个状态子，也就是说，它们的能量处于异态，虚态与实态共存的第二场域，常见的例子有介子等，所以，它们表现为具有强相互作用的非稳物理状态。

It is not hard to imagine that, when the energy of a system is fixed, the system may have many different distributive states. From the microscopic point of view, these distributive states always have some situations for a high probability of occurrence, which is named as the most probable distribution.

不难想象，当宏观观察体系能量为固定的时候，从微观角度观察体系可能有很多种不同的分布状态，而且在这些不同的分布状态中，总有一些状态出现的几率特别的大，而其中出现几率最大的分布状态被称为最可几分布。

14. 结论 Conclusions

Similar to time, defined as the macro state scalar of the micro event for the virtual operational process, temperature is the macro state scalar of the conjugate entanglement when the internal energy of the state respectively acts on the external state, also known as the thermo-state. For an isolated state system as a whole, due to the lack of external yin-yang entanglement of the kinetic energy, it loses the requirement of a statistical quantity, has neither significance for establishing state temperature, nor external entanglement in the isolated system.

犹如，时间是微观虚态事件操作过程的宏观状态标量，温度：是物态内部虚态能量分别对外部物态进行作用时，其共轭纠缠的一种宏观状态的系统标量，也称为热态；对一个孤立物态系统而言，由于缺乏外部阴阳纠缠动能，就失去了统计的数量要求，是没有热态温度的意义的，即孤立系统不存在外部纠缠。

Every physical body spontaneously and continuously emits electromagnetic, lightwave and gravitational radiations. At near thermodynamic equilibrium, the emitted radiation is closely described by either dark energy for blackbodies (may include Planck's law) or *Bekenstein-Hawking* radiation for blackholes, or in fact at both for normal objects. These waves, making up the radiations, can be imagined as $Y^{-}Y^{+}$-propagating transverse oscillating electric, magnetic and gravitational fields.

每一个物理体系都会自发地、连续地发射电磁、光波和引力辐射。在接近热力学平衡的情况下，发射的辐射可以用黑体的暗能量 (可以包括普朗克定律) 或黑洞的暗能量 Bekenstein-Hawking 辐射来描述，或者实际上正常物体同时具有这二种辐射。构成这些波的辐射，可以想象为 $Y^{-}Y^{+}$ 传播横振荡的电场、磁场和引力场。

Because of its dependence on temperature and area, *Planck* and *Schwarzschild* radiations (5.5.4) are said to be thermal radiation obeying area entropies. The higher the temperature or area of a body the more radiation it emits at every wave-propagation of light and entangling-transportation of gravitation. Since a blackhole acts like an ideal blackbody at the second or lower horizons, it reflects no light and absorbs full gravitation.

由于其对温度和面积的依赖性，普朗克辐射和Schwarzschild辐射 (5.5.4) 被称为从属于面积熵的热辐射。一个物体的温度或面积越大，它在光的每一次波传播和引力的纠缠传输中发出的辐射就越多。黑洞在第二个或更低的层界上接近一个理想的黑体，它不反射光，吸收全部引力。

As one of the crucial implication of the law of conservation of light, the nature of lights is propagated at or appeared between where the two objects interrupts potentially at near third horizon. Although the superphase modulation is at all levels of horizons, the transformation, transportation as well as interruption on the world lines are independent to or free from the degrees of freedom in physical space of the redundant coordinates such as$\{\theta, \varphi\}$.

作为光守恒定律的一个重要含义，光的特质，是出现在接近第三层界附近，由两个目标块交互作用下进行传播。尽管宫位调制分布在各个层界中，但在世界线的变换、传输和交互都是独立于或不依赖于物理空间冗余自由度的$\{\theta, \varphi\}$坐标系。

Therefore, *Aether* theory, introduced by Isaac Newton in 1718, has correctly sensed that there is something existence but incorrectly defined by the space-filling medium: “the existence of a medium, named as the aether, is a space-filling substance or field, necessary as a transmission medium for the propagation of electromagnetic or gravitational forces” . The replacement of *Aether* in modern physics is *Dark Energy,* defined as “an unknown form of energy which is hypothesized to permeate all of space, tending to accelerate the expansion of the universe.” Both of the key words, “space-filling” or “all of space” contradicts the law of neither conservation of light or conservation of gravitation.

因此，牛顿于1718年提出的以太理论，正确地感觉到了某些东西的存在，但错误地定义和解释为一种充满空间的介质：“存在一种叫做以太的介质，是一种充满空间的物质或场”，在现代物理学中，替代以太的概念是无质量的暗能量，定义为“一种未知形式

的能量，被假设渗透到整个空间，倾向于加速宇宙的膨胀”。这两个关键词，“空间充满”或者“整个空间”既违背光守恒定律，也违背了引力守恒定律。

对称场理论 Symmetric Fields

Chapter 6　　第 6 篇

In this chapter, the fields in the third horizon are unfolded into further details to testify empirically how and why *Quantum Fields* can prevail a series of groundbreakings over our classic *Electromagnetism and Gravitation* to derive *Symmetric Fields* as another important part of *Universal and Unified Field Theory*.

在这一章中，我们将进一步地展开第三层界的细节，以经典科学来证明，量子场如何和为什么能够跨越和形成一系列突破，从而导出电磁场和引子场的普适对称性场理论，成为《宇宙统一场》理论中的又一个重要组成部分。

As the functional quantity of an object, a set of the vector fields forms and projects its potentials to its surrounding space, arising from or acting on its opponent through a duality of reciprocal interactions dominated by both *inertial Boost* and *spiral Torque* of the *Lorentz* generators at the third horizon between the dual spacetime manifolds. As a result, it constitutes the general symmetric fields of gravitation, electromagnetism and thermodynamics.

作为一个物体的功能量，通过双时空流形之间的第三层界上，一组向量场由洛伦兹激发子的惯性幅度和螺旋扭矩控制的对偶相互作用，形成向周围空间发射宏观势气场，构成了引力场、电磁场和热流场的普遍对称场。

For the four fundamental interactions, commonly called forces, in nature, *Electromagnetism* or *Graviton* constitute all type of physical interaction that occurs between electrically charged or massive particles, although they appear as independence or loosely coupled at the third or fourth horizons. The electromagnetism usually exhibits a duality of electric and magnetic fields as well as their interruption in light speed. The graviton represents a torque duality between the virtual and physical energies of entanglements. Not only have both models accounted for the charge or mass volume independence of energies and explained the ability of matter and photon-graviton radiation to be in thermal equilibrium, but also reveals anomalies in thermodynamics, including the properties of blackbody for both light and gravitational radiance.

通常，称为力的四种基本相互作用，在自然界中，尽管它们在第三或第四层界看起来几乎是独立的或不具有耦合状态，电磁或引力场构成了带电粒子或大质量粒子之间发生的所有类型的物理相互作用。电磁学通常表现出电场和磁场的二象性，以及它们对光速的干扰性；然而，引子表现的是虚能量和实能量之间纠缠的一种力矩对偶性。这两个模型，不仅，考虑到了能量电荷性或体积质量性的独立性，解释了物质的光子和引子辐射处于热平衡状态的能力，而且，揭示了热力学中包括黑体对光和引子场辐射的异态性质。

1. 对称与反对称 Symmetry and Antisymmetry

As another major part of the unified theory, the quantum fields give rise to a symmetric environment and bring together from conservation of flux commutation and continuity to the general field entanglements: *Second Universal Field Equations*. Symmetry is the law of natural conservations that a system is preserved or remains unchanged or invariant under some transformations or transportations. As a duality, there is always a pair of intrinsic reciprocal conjugation: $Y^{-}Y^{+}$ symmetry and anti-symmetry, the basic principles of which are as the following:

作为统一理论的另一个重要组成部分，量子场产生了一个对称场境，整合流数对易守恒性、连续性和广义纠缠性：第二宇宙场方程组。对称性是系统在某些变换或运通下保持不变，即，不变性的自然守恒定律。作为一种二象性，总是存在一组内在互易共轭对：$Y^{-}Y^{+}$ 对称与反对称，它们的基本原理如下：

1. *Associated with its opponent potentials of scalar or vector fields, symmetry is a fluxion system cohesively and completely balanced such that it is invariant among all composite fields.*

   对称性与标量场或矢量场的对偶势气相联系，是一个连贯的、完全平衡的流动系统，它在所有的复合场中都是不变的。

2. *As a duality, an $Y^{-}Y^{+}$ anti-symmetry is a reciprocal component of its symmetric system to which it has a mirroring similarity physically and can annihilate into “nonexistence” virtually.*

   作为二象性，$Y^{-}Y^{+}$ 反对称是其对称系统的一个互辅互动部分，它在物理上具有镜像相似性，在本质上可以湮灭为“不存在”的虚拟性。

3. *Without a pair of $Y^{-}Y^{+}$ objects, no symmetry can be delivered to its surroundings consistently and perpetually sustainable as resources to a life streaming of entanglements at consumption with zero net momentum.*

如果没有一对 $Y^{-}Y^{+}$ 阴阳对耦模块，任何对称性都无法连贯地传递到周围场境，持续地作为生态流资源的纠缠，且维持零净动量消耗。

4. *Both symmetries preserve the laws of conservation consistently and distinctively, which orchestrate their local continuity respectively and harmonize each other dynamically.*

   这两种对称性保持了守恒定律的一致性和显赫性，它们分别协调各自局域的连续性和互惠动态的协调性。

For the symmetric fluxions, the entangling invariance requires that their fluxions are either conserved at zero net momentum or maintained by energy resource. Normally, the divergence of Y^{-} fluxion is conserved by the virtual forces 0^{+} of massless energies and the divergence of Y^{+} fluxion is balanced by the mass forces of physical resources. Together, they maintain each other's conservations and continuities cohesively and complementarily.

对于对称流动，纠缠不变性要求它们流数要么在零净动量下守恒，要么由能量资源来维持。通常情况下，Y^{-} 阴流动的散度由无质量能量的虚态力 0^{+} 来守恒，Y^{+} 阳流动的散度由物态资源的质量力来平衡，它们共同维持着彼此连贯的和互补的守恒性和连续性。

2. 流数连续性 Flex Continuity

In mathematics, *World Equations* of (3.4.5) can be written in term of the scalar, vector, and higher orders tensors, shown as the following:

在数学中，世界方程(3.4.5) 可以用标量、矢量和高阶张量来表示，如下：

$$W_b = W_0^{\pm} + \sum_n h_n \left\{ \kappa_1 \langle \dot{\partial}_\lambda \rangle^{\pm} + \kappa_2 \dot{\partial}_{\lambda_2} \langle \dot{\partial}_{\lambda^1} \rangle_s^{\pm} + \kappa_3 \dot{\partial}_{\lambda_3} \langle \dot{\partial}_{\lambda^2} \rangle_v^{\pm} \cdots \right\} \quad (6.2.1)$$

where κ_n is the coefficient of each order *n* of the event $\lambda^n = \lambda_1 \lambda_2 \cdots \lambda_n$ aggregation. The above equations are constituted by the scalar fields: $\phi^{\pm}$ and $\varphi^{\mp}$ at the second and third horizon (index s), their tangent vector fields $T_\nu^{\pm}$ and $\Upsilon_\nu^{\pm}$ at the fourth horizon (index v), and their tensor fields at higher horizons.

其中，κ_n 是事件 $\lambda^n = \lambda_1 \lambda_2 \cdots \lambda_n$ 聚集的每个 *n* 阶的系数。上述方程由标量场组成：第二层界和第三层界 (索引s) 的势气场分别为 $\phi^{\pm}$ 和 $\varphi^{\mp}$，第四层界的切向量场分别为 $T_\nu^{\pm}$ 和 $T_\nu^{\pm}$，一直到较高层界的张量场。

For *Second Universal Field Equations* (3.9.3, 3.9.6) without asymmetric entanglements or symmetric dynamics, the fluxions satisfy the residual conditions of symmetric interweavement.

在对称动态的第二宇宙场方程 (3.9.3，3.9.6) 中，如果没有协称纠缠的对称运行 $\mathbf{g}_a^{\mp} = 0$ 的作用，则流数量满足对称性对易交互的驻留条件。

$$\dot{\partial}_\lambda \mathbf{f}_\nu^{+} \equiv \kappa_f \langle \hat{\partial}_\lambda \hat{\partial}_\lambda, \check{\partial}^\lambda \check{\partial}^\lambda \rangle_\nu^{+} = \langle W_0^{+} \rangle - \kappa_1 \left[\check{\partial}^{\lambda_2} - \hat{\partial}_{\lambda_2} \right]_\nu^{+} + \kappa_2 \left\langle \check{\partial}_{\lambda_3} \left(\hat{\partial}_{\lambda_2} - \check{\partial}^{\lambda_2} \right) \right\rangle_\nu^{+} \quad : \mathbf{g}_a^{-} = 0 \quad (6.2.2)$$

$$\dot{\partial}_\lambda \mathbf{f}_\nu^{-} \equiv \kappa_f \langle \check{\partial}_\lambda \check{\partial}_\lambda, \hat{\partial}^\lambda \hat{\partial}^\lambda \rangle_\nu^{-} = \langle W_0^{-} \rangle + \kappa_1 \left[\check{\partial}_{\lambda_1} - \hat{\partial}^{\lambda_1} \right]_\nu^{-} + \kappa_2 \left\langle \check{\partial}_{\lambda_1} \left(\hat{\partial}^{\lambda_2} - \check{\partial}^{\lambda_2} \right) \right\rangle_\nu^{-} \quad : \mathbf{g}_a^{+} = 0 \quad (6.2.3)$$

At the third horizon, a pair of the flux continuity above can derive the horizon forces, giving rise to the electromagnetic and gravitational fields.

在第三层界，上面的一对通量连续性可以导出层界力，从而产生电磁场和引力场。

3. 对称场张量 Symmetric Field Tensors

As the function quantity from the second to third horizon, a vector field forms and projects its potentials to its surrounding space, arisen by or acting on its opponent potential through a duality of reciprocal interactions dominated by *Lorentz Generators*. Under the Y^- primary given by the generator of (4.11.2-3), the event processes institute and operate the entangling fields:

向量场是从第二层界到第三层界的函数量，通过洛伦兹激发子主导和相互作用的对偶运作，形成并向周围空间投射势气场，由其共轭气场产生并作用于对偶势气场。在 Y^- 阴优势下，洛伦兹激发子方程 (4.11.2-3) 给出事件过程建立和操作的绕缠场：

$$\check{T}_{\mu\nu}^{-n} \equiv \frac{\hbar c}{2E^-}\left\langle \hat{\partial}^\lambda - \check{\partial}^\lambda \right\rangle_\gamma^- \mapsto \frac{\hbar c}{2E^-}\left\langle \dot{x}^\mu L_\mu^+ \partial^\mu - \dot{x}^\nu L_\nu^- \partial_\nu \right\rangle_\nu^- \tag{6.3.1}$$

$$\check{T}_{\mu\nu}^{-n} = \begin{pmatrix} \xi_0 & \beta_1 & \beta_2 & \beta_3 \\ -\beta_1 & \xi_1 & -e_3 & e_2 \\ -\beta_2 & e_3 & \xi_2 & -e_1 \\ -\beta_3 & -e_2 & e_1 & \xi_3 \end{pmatrix}_\times = \begin{pmatrix} 0 & \mathbf{B}_q^- \\ -\mathbf{B}_q^- & \frac{\check{\mathbf{b}}}{c} \times \mathbf{E}_q^- \end{pmatrix} + \xi_\nu \tag{6.3.2}$$

where $\hat{\mathbf{b}}$ is a base vector, symbol $(\ )_\times$ indicates the off-diagonal elements of the tensor. At a constant speed, this Y^- *Transform Tensor* constructs a pair of its off-diagonal fields: $\check{T}_{m\alpha}^{+n} = -\check{T}_{m\alpha}^{-n}$ and embeds a pair of the antisymmetric matrix as a foundational structure of symmetric fields, giving rise to a foundation of the magnetic ($\beta_a \mapsto \mathbf{B}_q^-$) and electric ($e_\nu \mapsto \mathbf{E}_q^-$) fields.

其中，$\hat{\mathbf{b}}$ 是基向量，符号 $(\ )_\times$ 表示张量的非对角元素。在恒定速度下，Y^-变换张量构造了一对非对角场：$\check{T}_{m\alpha}^{+n} = -\check{T}_{m\alpha}^{-n}$，并嵌入了一对反对称矩阵，由此，形成对称场的基础架构，从而，奠定了磁场 ($\beta_a \mapsto \mathbf{B}_q^-$) 和电场 ($e_\nu \mapsto \mathbf{E}_q^-$) 的基础。

In the parallel fashion above, the event processes generate the reciprocal entanglements of the Y^+ commutation of the vector V^ν and scalar φ^- fields, shown by the following equations:

利用类似的方法，事件过程产生矢量场和标量场的 Y^+ 交换的互易纠缠，由如下式所示：

$$\hat{T}^{+n}_{\mu\nu} \equiv \frac{\hbar c}{2E^+}\langle \hat{\partial}_\lambda - \check{\partial}^\lambda \rangle^+_\gamma \mapsto \frac{\hbar c}{2E^+}\langle \dot{x}_\mu L^+_\mu \partial^\mu - \dot{x}^\nu L^-_\nu \partial_\nu \rangle^+_v \tag{6.3.3}$$

$$\hat{T}^{+n}_{\nu\alpha} = \begin{pmatrix} \xi^0 & d^1 & d^2 & d^3 \\ -d^1 & \xi^1 & h^3 & -h^2 \\ -d^2 & -h^3 & \xi^2 & h^1 \\ -d^3 & h^2 & -h^1 & \xi^3 \end{pmatrix}_\times = \begin{pmatrix} 0 & \mathbf{D}^+_q \\ -\mathbf{D}^+_q & \frac{\mathbf{u}}{c^2} \times \mathbf{H}^+_q \end{pmatrix} + \xi^\nu \tag{6.3.4}$$

At a constant speed, this Y^+ *Transport Tensor* constructs another pair of off-diagonal fields $\hat{T}^{-n}_{\nu\alpha} = -\hat{T}^{+n}_{\nu\alpha}$, giving rise to the displacement $d^\alpha \mapsto \mathbf{D}^+_q$ and magnetizing $h^\nu \mapsto \mathbf{H}^+_g$ fields.

在恒定速度下，这个运通张量构造了另一对非对角场 $\hat{T}^{-n}_{\nu\alpha} = -\hat{T}^{+n}_{\nu\alpha}$，从而产生位移 $d^\alpha \mapsto \mathbf{D}^+_q$ 场和磁化 $h^\nu \mapsto \mathbf{H}^+_g$ 场。

Because of the Y^-Y^+ continuity and commutation infrastructure of rising *horizons*, an event generates entanglements between the manifolds, and performs the operators of ∂^μ and ∂_m, transports the motion vectors of toques and gives rise to the vector potentials. Parallel to the γ boost generators, *Spiral Torque* of the χ generators naturally construct a pair of operational matrices into the third horizon that are also antisymmetric for elements in the 4x4 matrixes of the respective manifolds:

基于产生层界的 Y^-Y^+ 连续性和对易性的基础架构，事件在流形之间产生纠缠，执行 ∂^μ 和 ∂_m 操作，传输扭矩运动矢量，产生相应的矢量势气场。类同于 γ 幅度激发子，螺旋相度转矩 χ 激发子自然地在第三个层界中构造一对运作矩阵，在相应流形的 4x4 矩阵中，其元素也是反对称的：

$$\check{\Upsilon}^{-a}_{\mu\nu} \equiv \frac{\hbar c}{2E^-}\left\langle \hat{\partial}^\lambda - \check{\partial}^\lambda \right\rangle^-_\chi \mapsto \begin{pmatrix} 0 & \mathbf{B}^-_g \\ -\mathbf{B}^-_g & \frac{\check{\mathbf{b}}}{c} \times \mathbf{E}^-_g \end{pmatrix} = -\check{\Upsilon}^{+a}_{\nu\mu} \tag{6.3.5}$$

$$\hat{\Upsilon}^{+a}_{\nu\mu} \equiv \frac{\hbar c}{2E^{+}} \left\langle \hat{\partial}_{\lambda} - \check{\partial}^{\lambda} \right\rangle^{+}_{\chi} \mapsto \begin{pmatrix} 0 & \mathbf{D}^{+}_{g} \\ -\mathbf{D}^{+}_{g} & \frac{\mathbf{u}}{c_g^2} \times \mathbf{H}^{+}_{g} \end{pmatrix} = -\hat{\Upsilon}^{-a}_{\mu\nu} \quad (6.3.6)$$

These *Torsion Tensors* construct two pairs of the off-diagonal fields: $\check{\Upsilon}^{+}_{m\alpha} = -\check{\Upsilon}^{-}_{m\alpha}$ and $\hat{\Upsilon}^{+}_{m\alpha} = -\hat{\Upsilon}^{-}_{m\alpha}$, and embed the antisymmetric matrixes as a foundational structure giving rise to

这些扭转张量，构造了两对非对角元素的场：$\check{\Upsilon}^{+}_{m\alpha} = -\check{\Upsilon}^{-}_{m\alpha}$ 和 $\hat{\Upsilon}^{+}_{m\alpha} = -\hat{\Upsilon}^{-}_{m\alpha}$，并将反对称矩阵作为基本架构嵌入其中，从而：

i. A pair of the virtual motion stress $\mathbf{B}^{-}_{g}$ *and physical twist torsion* $\mathbf{E}^{-}_{g}$ *fields at* Y^{-}*-supremacy, and*

在 Y^{-} 优势下，产生了一对虚拟运动应力 $\mathbf{B}^{-}_{g}$ 和物理扭转 $\mathbf{E}^{-}_{g}$ 场，

ii. Another pair of the physical displacement stress $\mathbf{D}^{+}_{g}$ *and virtual polarizing twist* $\mathbf{H}^{+}_{g}$ *fields at* Y^{+}*-supremacy.*

同时，在 Y^{+} 阳优势下，产生了另一对物理位移应力 $\mathbf{D}^{+}_{g}$ 和虚极化扭转 $\mathbf{H}^{+}_{g}$ 场。

Together, a set of the torsion fields institutes the Electromagnetic and Gravitational infrastructure at the third horizon.

一组扭转场共同构成了在第三层界中电磁和引力的基础架构。

4. 层界力 Horizon Forces

For the symmetric fluxions, the entangling invariance requires that their fluxions are either conserved at zero net momentum or maintained by energy resource. Normally, the divergence of Y^- fluxion is conserved by the virtual forces 0^+ of massless energies and the divergence of Y^+ fluxion is balanced by the mass forces of physical resources. Together, they maintain each other's conservations and continuities cohesively and complementarily.

对称流数中，纠缠不变性要求它们的流数要么在零净动量下守恒，要么由能量源来维持。通常情况下，Y^- 阴流数的散度由无质量能量的虚力 0^+ 来守恒，Y^+ 流数的散度由物态资源的质量力来平衡，它们共同维持着彼此连贯的和互补的守恒性和连续性。

Under physical primacy, the Y^- fluxion generates acceleration tensor $\mathbf{g}_\times^-$ and represents the time divergence of the forces acting on the opponent objects. This divergence, $\check{\partial}_{\lambda=t} = \left(ic\partial_\kappa \quad \mathbf{u}^-\nabla\right)$, appears at the *Two-Dimensional* world plane acting on the 2x2 tensors and extend to the 4x4 spacetime tensors. Substituting the equations (6.3.2, 6.3.5) into symmetric (6.2.3) fluxion, we have the matrix formula in a pair of the vector formulation for the internal fields:

在物理优先的情况下，Y^-流数产生加速度张量 $\mathbf{g}_\times^-$， 并以时间散度的力作用于对偶上。这个散度 $\check{\partial}_{\lambda=t} = \left(ic\partial_\kappa \quad \mathbf{u}^-\nabla\right)$ 开源于 2x2 张量的二维世界平面上，并衍生伸展到 4x4 的时空张量。将方程 (6.3.2，6.3.5) 代入对称 (6.2.3) 流动通量，我们得到了由一组向量矩阵公式所给出的内部场：

$$\frac{\hbar c}{2E^-}\left\langle \check{\partial}_\lambda\left(\hat{\partial}^\lambda - \check{\partial}^\lambda\right)\right\rangle_v^- = c\left(ic_\kappa\partial_\kappa \quad \mathbf{u}^-\nabla\right)\begin{pmatrix} 0 & \mathbf{B}^- \\ -\mathbf{B}^- & \frac{\check{\mathbf{b}}}{c}\times\mathbf{E}^- \end{pmatrix} \qquad (6.4.1)$$

$$\mathbf{B}^- = \mathbf{B}_q^- + \mathbf{B}_g^- \qquad \mathbf{E}^- = \mathbf{E}_q^- + \frac{c}{c_g}\mathbf{E}_g^- \qquad (6.4.2)$$

where the $\mathbf{E}_q^-$ and $\mathbf{E}_g^-$ are the *Electric* and *Torsion Strength* fields, and the $\mathbf{B}_q^-$ and $\mathbf{B}_g^-$ are the *Magnetic* and *Twist* fields.

其中，$\mathbf{E}_q^-$ 和 $\mathbf{E}_g^-$ 是电场及其扭转强度场，$\mathbf{B}_q^-$ 和 $\mathbf{B}_g^-$ 是磁场及其扭转场。

In a parallel fashion, the symmetric Y^+ fluxion (6.2.2) generates acceleration tensor $\bar{\mathbf{g}}^+$ under virtual primacy for the tensors (6.3.2, 6.3.4) $\hat{T}_{\mu\nu}^{+a}$ and (6.3.5-6) $\hat{\Upsilon}_{\mu\nu}^{+a}$. At the third horizon, one has the matrix formula in another pair of the vector formulation for the internal fields:

运用同理推演，对称的 Y^+ 流数方程 (6.2.2) 在张量 (6.3.2，6.3.4) $\hat{T}_{\mu\nu}^{+a}$ 和 (6.3.5-6) $\hat{\Upsilon}_{\mu\nu}^{+a}$ 的虚态优势下产生加速度张量 $\bar{\mathbf{g}}^+$，在第三层界中，可以得到由一组向量矩阵公式所给出的内部场：

$$-\frac{\hbar c}{2E^+}\left\langle \check{\partial}_\lambda\left(\hat{\partial}_\lambda - \check{\partial}^\lambda\right)\right\rangle_v^+ = c\check{\partial}_\lambda \mathbf{F}^+ \qquad : \check{\partial}_{\lambda=t} = \left(ic\partial_\kappa \quad \mathbf{u}^-\nabla\right) \tag{6.4.3}$$

$$\mathbf{F}^+ = \kappa_x^+ \begin{pmatrix} 0 & \mathbf{D}_q^+ + \mathbf{D}_g^+ \\ -\mathbf{D}_q^+ - \mathbf{D}_g^+ & \frac{\mathbf{u}_q}{c^2}\times\mathbf{H}_q^+ + \frac{\mathbf{u}_g}{c_g^2}\times\mathbf{H}_g^+ \end{pmatrix} \tag{6.4.4}$$

where $\mathbf{u}_q$ is speed of a charged object, and $\mathbf{u}_g$ is speed of a gravitational mass. The $\mathbf{D}_q^+$ and $\mathbf{D}_g^+$ are the *Electric* and *Torsion Displacing* fields, and the $\mathbf{H}_q^+$ and $\mathbf{H}_g^+$ are the *Magnetic* and *Twist Polarizing* fields.

其中，$\mathbf{u}_q$ 是带电物体的速度，$\mathbf{u}_g$ 是引力质量的速度。$\mathbf{D}_q^+$ 和 $\mathbf{D}_g^+$ 是电场及其扭转位移场，$\mathbf{H}_q^+$ 和 $\mathbf{H}_g^+$ 是磁场及其扭转极化场。

Apparently, the field of equation (6.4.3) has a force that gives rise to the next field of the horizons. Projecting on the spacetime manifold, it emerges and acts as the flux forces on objects. With charges or masses, this force is imposed on the physical lines of the world planes and projecting to spacetime manifold at the following expressions:

显然，方程 (6.4.3) 的场有一个力，这个力产生了下一个层界。它投射在时空流形上，显现为作用于目标块上的通量力。对于电荷或质量，此力施加在世界平面的物理线上，并由以下表达式投射到时空流形：

$$\mathbf{F}_q^+ = Q\mu_e\left(c^2\mathbf{D}_q^+ + \mathbf{u}_q \times \mathbf{H}_q^+\right) \qquad : \kappa_q^+ = Qc^2\mu_e,\ c^2 = \frac{1}{\varepsilon_q\mu_q} \qquad (6.4.5)$$

$$\mathbf{F}_g^+ = M\mu_g\left(c_g^2\mathbf{D}_g^+ + \mathbf{u}_g \times \mathbf{H}_g^+\right) \qquad : \kappa_g^+ = Mc_g^2\mu_g,\ c_g^2 = \frac{1}{\varepsilon_g\mu_g} \qquad (6.4.6)$$

where Q is a charge, *M* is a mass, ε_q or ε_g is the permittivity, μ_q or μ_g is the permeability of the materials.

其中，Q 是电荷， *M* 是质量，ε_q 或 ε_g 是介荷性或介引性常数，μ_q 或 μ_g 是材料的磁力或引力渗透导率。

In a free space or vacuum, the constitutive relation (6.4.5) results in a summation of electric and magnetic forces:

在自由空间或真空中，有 (6.4.5) 组成部分，导致电磁力的总和：

$$\mathbf{F}_q = Q\left(\mathbf{E}_q^- + \mathbf{u}_q \times \mathbf{B}_q^-\right) \qquad : \mathbf{D}_q^+ = \varepsilon_e\mathbf{E}_q^-, \quad \mathbf{B}_q^- = \mu_e\mathbf{H}_q^+ \qquad (6.4.7)$$

known as *Lorentz Force*, discovered in 1889. Because the fluxion force $\dot{\partial}_\lambda\mathbf{f}_s^+$ is proportional to $(\hat{\partial}_\lambda - \check{\partial}^\lambda)$, the force is statistically aggregated from or arisen by *Dirac Spinors* (4.8.1), symmetrically. Known as *Lorentz Force*, discovered in 1889, it was first formulated by James Clark Maxwell in 1865, then by Oliver Heaviside in 1889, and finally by Hendrick Lorentz in 1891. Traditionally, the Lorentz law describes the electromagnetic interactions by the force acting on a moving point charge in the presence of electromagnetic fields. A particle of charge Q moving with velocity $\mathbf{u}$ in its induction of an electric field $\mathbf{E}_q^-$ and a magnetic field $\mathbf{B}_q^-$ experiences a force $\mathbf{F}_q^+$. A positively charged particle is accelerated in the same linear orientation as the $\mathbf{E}_q^-$ field, but will curve perpendicularly to both the instantaneous velocity vector $\mathbf{u}$ and the $\mathbf{B}_q^-$ field according to the right-hand rule.

这就是著名的洛伦兹力，发现于1889年。由于流数力 $\dot{\partial}_\lambda\mathbf{f}_s^+$ 与 $(\hat{\partial}_\lambda - \check{\partial}^\lambda)$ 成正比，该力在统计意义上，由狄拉克旋量 (4.8.1) 对称地聚集或产生。洛伦兹力是1889年发现的，它首先由詹姆斯·克拉克·麦克斯韦于1865年提出，然后由奥利弗·海维塞德于1889年提出，最后由亨德里克·洛伦兹于1891年提出。传统上，洛伦兹定律描述了在电磁场中作用于运动点电荷的电磁相互作用。带电粒子 Q 在电场 $\mathbf{E}_q^-$ 和磁场 $\mathbf{B}_q^-$ 的感应作用下，以

$\mathbf{u}$ 速度运动，会受到一个力 $\mathbf{F}_q^+$。带正电的粒子在与 $\mathbf{E}_q^-$ 场相同的线性方向上加速，但根据右手法则，它将垂直于瞬时速度矢量 $\mathbf{u}$ 和 $\mathbf{B}_q^-$ 场。

Following the same methodology, the *Torsion* forces emerges as gravitation given by the internal elements of Y^+ dark fluxions of the symmetric system.

按照同样的方法，扭转力是由对称系统的 Y^+ 暗流数的内部元素给出的引力。

$$\mathbf{F}_g = M\mu_g\left(c_g^2\mathbf{D}_g^+ + \mathbf{u}_g \times \mathbf{H}_g^+\right) = M\left(\mathbf{E}_g^- + \mathbf{u}_g \times \mathbf{B}_g^-\right) \qquad (6.4.8)$$

where $c^2 = 1/(\varepsilon_g\mu_g)$, ε_g is gravitational permittivity and μ_g gravitational permeability of the materials.

其中，$c^2 = 1/(\varepsilon_g\mu_g)$。$\varepsilon_g$ 是材料的介引常数， μ_g 为引力渗透导率。

5. 广义对称场 General Symmetric Fields

Balanced at the steady states, integrality of the virtual and physical environment is generally at constant, and the Y^+ asymmetric accelerator $\mathbf{g}_a^+$ is under eternal states normalizable to zero 0^+. Therefore, a pair of the Y^+ and Y^- continuity of the equations (6.2.2-3) institutes a general expression of conservations of symmetry:

在稳态平衡的情境下，虚拟环境和物理环境的完整性一般是恒定的，Y^+ 协称加速器 $\mathbf{g}_a^+$ 处于可归零 0^+ 的永恒状态下。因此，方程 (6.2.2-3) 的一对 Y^+ 和 Y^- 连续性给出了对称守恒性的一般表达式：

$$\frac{\hbar c}{2E^-}\left\langle \check{\partial}_\lambda\left(\hat{\partial}^\lambda - \check{\partial}^\lambda\right)\right\rangle_v^- = \dot{\partial}_\lambda \mathbf{f}_v^- - \frac{c}{2}\left[\check{\partial}_\lambda - \hat{\partial}^\lambda\right]_v^- - \langle W_0^- \rangle = 0 \qquad (6.5.1)$$

$$-\frac{\hbar c}{2E^+}\left\langle \check{\partial}_\lambda\left(\check{\partial}^\lambda - \hat{\partial}_\lambda\right)\right\rangle_v^+ = \dot{\partial}_\lambda \mathbf{f}_v^+ - \frac{c}{2}\left[\hat{\partial}_\lambda - \check{\partial}^\lambda\right]_v^+ - \langle W_0^+ \rangle \equiv \mathbf{J}_x \qquad (6.5.2)$$

The first equation presents invariance of Y^-Y^+ local commutation $\frac{c}{2}\left[\hat{\partial}^\lambda - \check{\partial}_\lambda\right]_v^- - \langle W_0^- \rangle \mapsto 0^+$. The second equation reveals that the Y^- resources of the bulk fluxion are characterizable by density $\rho_x \mathbf{u}_x$ and current $\mathbf{J}_x$:

第一个方程具有 Y^-Y^+ 局部对易 $\frac{c}{2}\left[\hat{\partial}^\lambda - \check{\partial}_\lambda\right]_v^- - \langle W_0^- \rangle \mapsto 0^+$ 的不变性。第二个方程揭示了流体的 Y^- 资源可用密度 $\rho_x \mathbf{u}_x$ 和电流 $\mathbf{J}_x$ 来表征：

$$\mathbf{J}_x \equiv \mathbf{J}_q^- - \mathbf{J}_g^- \qquad \because \mathbf{J}_q^- = \left\{\mathbf{u}_q \rho_q, \mathbf{J}_q\right\}, \quad \mathbf{J}_g^- = 4\pi G\left\{\mathbf{u}_g \rho_g, \mathbf{J}_g\right\} \qquad (6.5.3)$$

where the $\mathbf{u}_q$ is a negative charged object and $\mathbf{u}_g$ appears moving in an opposite direction, and *G* is *Newton's* gravitational constant. The total sources comprise multiple components to include both of the $Y^\mp$ fluxion forces, thermodynamics, as well as asymmetric suppliers.

其中，$\mathbf{u}_q$ 是一个带负电荷的物体，$\mathbf{u}_g$ 看起来朝着相反的方向移动，*G* 是牛顿的引力常数。总源包涵多个成分，包括 $Y^\mp$ 流动力、热力学、以及协称源泉。

Sourced by the virtual time operation $\lambda \propto t$, the dark fluxion of Y^- boost fields has the Y^+ conservation resources. Combined with (6.4.1), the equation (6.5.1) is equivalent to a pair of the expressions:

由虚拟时间运算 $\lambda \propto t$ 得到的 Y^- 阴幅度场的暗流数量，具有 Y^+ 阳资源守恒。结合 (6.4.1)，方程式 (6.5.1) 相当于一对表达式：

$$\left(\mathbf{u}_q \nabla\right) \cdot \mathbf{B}_q^- + \left(\mathbf{u}_g \nabla\right) \cdot \mathbf{B}_g^- = 0 \tag{6.5.4}$$

$$\frac{\partial}{\partial t}\left(\mathbf{B}_q^- + \mathbf{B}_g^-\right) + \left(\frac{\mathbf{u}_q}{c} \nabla\right) \times \mathbf{E}_q^- + \left(\frac{\mathbf{u}_g}{c_g} \nabla\right) \times \mathbf{E}_g^- = 0 \tag{6.5.5}$$

It represents the cohesive equations of gravitational and electromagnetic fields under the Y^- symmetric dynamics.

在 Y^- 阴对称动力学下， 它代表了结成一个整体的引力场和电磁场方程组。

Continuing to operate the equation (6.4.3) through the time events $\lambda \propto t$, sustained by the resources (6.5.3), the derivative $\check{\partial}_{\lambda=t}$ to the fields evolves and gives rise to the dynamics of next horizon, shown by the Y^+ field relationships:

在资源 (6.5.3) 的支持下，时间事件 $\lambda \propto t$ 继续对方程 (6.4.3) 进行操作，场的导数 $\check{\partial}_{\lambda=t}$ 演化，可产生更高层界的动力学，由 Y^+ 场关系所示：

$$\mathbf{u}_q \nabla \cdot \mathbf{D}_q^+ + \mathbf{u}_g \nabla \cdot \mathbf{D}_g^+ = \mathbf{u}_q \rho_q - 4\pi G \mathbf{u}_g \rho_g \tag{6.5.6}$$

$$\begin{aligned} &\frac{\mathbf{u}_q \cdot \mathbf{u}_q}{c^2} \nabla \times \mathbf{H}_q^+ + \frac{\mathbf{u}_g \cdot \mathbf{u}_g}{c_g^2} \nabla \times \mathbf{H}_g^+ - \frac{\partial \mathbf{D}_q^+}{\partial t} - \frac{\partial \mathbf{D}_g^+}{\partial t} \\ &\qquad = \mathbf{J}_q - 4\pi G \mathbf{J}_g + \mathbf{H}_q^+ \cdot \left(\frac{\mathbf{u}_q}{c} \nabla\right) \times \frac{\mathbf{u}_q}{c} + \mathbf{H}_g^+ \cdot \left(\frac{\mathbf{u}_g}{c_g} \nabla\right) \times \frac{\mathbf{u}_g}{c_g} \end{aligned} \tag{6.5.7}$$

where the formula, $\nabla \cdot (\mathbf{u} \times \mathbf{H}) = \mathbf{H} \cdot (\nabla \times \mathbf{u}) - \mathbf{u} \cdot (\nabla \times \mathbf{H})$, is applied.

其中，应用了 $\nabla \cdot (\mathbf{u} \times \mathbf{H}) = \mathbf{H} \cdot (\nabla \times \mathbf{u}) - \mathbf{u} \cdot (\nabla \times \mathbf{H})$ 公式。

At the constant speed, a set of the formulations above is further simplified to and collected as *General Symmetric Fields*:

在恒定速度下，上述方程可以进一步简化成如下一套公式组，**广义对称场方程组**：

$$\nabla \cdot \left(\mathbf{B}_q^- + \eta \mathbf{B}_g^-\right) = 0^+ \qquad : \eta = c_g / c \qquad (6.5.8)$$

$$\nabla \cdot \left(\mathbf{D}_q^+ + \eta \mathbf{D}_g^+\right) = \rho_q - 4\pi G \eta \rho_g \qquad (6.5.9)$$

$$\nabla \times \left(\mathbf{E}_q^- + \mathbf{E}_g^-\right) + \frac{\partial}{\partial t}\left(\mathbf{B}_q^- + \mathbf{B}_g^-\right) = 0^+ \qquad (6.5.10)$$

$$\nabla \times \left(\mathbf{H}_q^+ + \mathbf{H}_g^+\right) - \frac{\partial}{\partial t}\left(\mathbf{D}_q^+ + \mathbf{D}_g^+\right) = \mathbf{J}_q - 4\pi G \mathbf{J}_g \qquad (6.5.11)$$

As the general relationship among electromagnetic field, charge density, current density, gravitational field, mass density and flux density, the four partial differential equations (6.5.1-4) includes bot electromagnetic and gravitational field equations of charge and mass particles and the density of charge and mass fluxions.

作为电磁场、电荷密度、电流密度、引力场、质量密度、流体密度之间关係的四个普遍偏微分方程组，分别描述了荷性子的电磁场和质量子的引力场方程，及其相应电荷和质量流体密度，等。

Because the gravitational fields are given by *Torque Tensors* $\Upsilon_{\mu\alpha}$ and emerged from the second horizon on the world planes, *Gravitational* fields might appear weak where the charge fields are dominant by electrons. At the third horizon, electromagnetic fields at distance become weak while gravitational force can be significant at short range closer to its central-singularity. At the higher horizon, a massive object has a middle range of gravitation fields. For any charged objects, both electromagnetic and gravitational fields are hardly separable although their intensive effects can be weighted differently by the range of distance and quantity of charges and masses.

由于，引力场是由力矩张量 $\Upsilon_{\mu\alpha}$ 给出的，并且是从世界平面的第二个层界出现的，因此，由电子支配的电荷场域为主导，引力场可能显得很弱。在第三个层界，远程电磁场变得很弱，而引力在靠近其中心奇点的短程距离就显得很明显。在更高的层界上，一个巨大的物体有一个中程范围的引力场。对于任何带电物体，电磁场和引力场都很难分离，尽管它们各自具有特殊效应，可以通过电荷和质量的距离和数量的不同来进行加权。

6. 电磁场论 Electromagnetism

For the situation at the constant speed *c* and $\zeta^\mu \to \gamma^\mu$, the *General Symmetric Fields* (6.5.8-11) emerge in a set of classical equations:

在恒速 *c* 和伽马 $\zeta^\mu \to \gamma^\mu$ 的场景中，广义对称场方程 (6.5.8-11) ，简化为一组经典方程：

$$\nabla \cdot \mathbf{B}_q = 0 \qquad \because \mathbf{B}_q \equiv \mathbf{B}_q^- \tag{6.6.1}$$

$$\nabla \cdot \mathbf{D}_q = \rho_q \qquad \because \mathbf{D}_q \equiv \mathbf{D}_q^+ \tag{6.6.2}$$

$$\nabla \times \mathbf{E}_q + \frac{\partial \mathbf{B}_q}{\partial t} = 0 \qquad \because \mathbf{E}_q \equiv \mathbf{E}_q^- \tag{6.6.3}$$

$$\nabla \times \mathbf{H}_q - \frac{\partial \mathbf{D}_q}{\partial t} = \mathbf{J}_q \qquad \because \mathbf{H}_q \equiv \mathbf{H}_q^+ \tag{6.6.4}$$

known as *Maxwell's Equations*, discovered in 1820s.

这就是著名的麦斯威尔方程，发表于1820年。

As the relationship among electromagnetic field, charge density, current density, and flux density, the four partial differential equations (6.6.1-4) represents i) Gauss law of how charge produces electric field, ii) Gauss law of magnetic field indicating that magnetic monopole does not exist, iii) Faraday induction law explaining how time-varying magnetic field produces electric field, and iv) how current and electric field associate magnetic field in realtime. At the same time, it also includes the gravitational field equation of mass particles and the density of mass fluxions.

作为电磁场、电荷密度、电流密度、流体密度之间关係的四个偏微分方程组，分别描述了电荷如何产生电场的高斯定律、表明磁单极子不存在的高斯磁定律、解释时变磁场如何产生电场的法拉第感应定律，以及说明电流和时变电场怎样产生磁场的安培定律；同时，也包含了质量粒子的引力场方程和质量流体密度等。

The second equation includes that the law of interaction between charges discovered by Charles Coulomb, a French physicist, in 1785. This present an inverse square law: the force is inversely proportional to the square of the distance between objects. Taking a spherical surface in the integral form of (6.6.2) at a radius r, centered at the point charge Q, we have the following formulae in a free space or vacuum:

第二个方程中同时包含了法国物理学家查尔斯·库仑于发现的电荷之间的相互作用定律，提出了了逆平方定律：作用力与物体之间的距离平方成反比。用球面为半径 r 的通量流方程 (6.6.2) 进行积分，以点电荷Q为中心，在自由空间或真空中，我们有以下公式：

$$\mathbf{E}(\mathbf{r}) = \frac{Q}{4\pi\varepsilon_0}\frac{\hat{\mathbf{r}}}{r^2} \qquad \mathbf{F}(\mathbf{r}) = q\mathbf{E}(\mathbf{r}) \tag{6.6.5}$$

known as *Coulomb*'s force. An electric force may be either attractive or repulsive, depending on the signs of the charges.

这就是著名的称为库仑力，发现于1784年。根据荷性，一个力可以是吸引的，也可以是排斥的。

Therefore, as the foundation, the quantum symmetric fields give rise to classical electromagnetism, describing how electric and magnetic fields are generated by charges, currents, and weak-force interactions from *General Symmetric Fields*. Another important consequence of the equations is that they demonstrate how the oscillation fluctuating electric and magnetic fields propagates at the speed of light.

因此，在基础层面上，量子对称场产生了经典电磁学，完整地描述了广义对称场中，也内涵着电场和磁场是如何产生电荷、电流和弱力的相互作用。这些方程的另一个重要结果是，它们证明了，电场和磁场振荡起伏是如何以光速进行传播。

7. 引力场论 Gravitational Fields

For the charge neutral objects and $\zeta^{\mu} \to \chi^{\mu}$, the equations (6.5.8-11) become a group of the pure *Gravitational Fields*, shown straightforwardly by:

对于电荷中性模块，在恺 $\zeta^{\mu} \to \chi^{\mu}$ 的场景中，方程式 (6.5.8-11) 变成一组纯引力场，可以直截了当地表示为：

$$\left(\mathbf{u}_g \nabla\right) \cdot \mathbf{B}_g^- = 0 \tag{6.7.1}$$

$$\mathbf{u}_g \nabla \cdot \mathbf{D}_g^+ = -4\pi G \mathbf{u}_g \rho_g \tag{6.7.2}$$

$$\frac{\partial}{\partial t}\mathbf{B}_g^- + \left(\frac{\mathbf{u}_g}{c_g}\nabla\right) \times \mathbf{E}_g^- = 0 \tag{6.7.3}$$

$$\frac{\mathbf{u}_g \cdot \mathbf{u}_g}{c_g^2}\nabla \times \mathbf{H}_g^+ - \frac{\partial \mathbf{D}_g^+}{\partial t} = -4\pi G \mathbf{J}_g + \mathbf{H}_g^+ \cdot \left(\frac{\mathbf{u}_g}{c_g}\nabla\right) \times \frac{\mathbf{u}_g}{c_g} \tag{6.7.4}$$

At the constant speed, these equations can be reduced to and coincide closely with *Lorentz invariant Theory* of gravitation, introduced in 1893.

在恒定速度下，这些方程可以简化，并与1893年引入的洛伦兹不变性的引力理论紧密吻合。

The second equation includes the law of gravitational action between masses discovered by Isaac Newton, an English physicist, in 1686, It represents the inverse square laws: the force is inversely proportional to the square of the distance between objects. Taking a spherical surface in the integral form of (6.7.2) at a radius r, centered at the point mass *M* for the charge neutral objects, we have the following formulae in a free space or vacuum, straightforwardly:

第二个方程中同时包含了英格兰物理学家艾萨克·牛顿于1686年发现的质量之间的重力作用定律，表述为逆平方律：作用力与物体之间的距离平方成反比。用球面为半径 r 的通量流方程 (6.7.2) 进行积分，以点质量 *m* 为中心，在自由空间或真空中，我们有以下质量引力方程：

$$\nabla^2 \psi_g^+ = 4\pi G \rho_g \qquad : \mathbf{D}_g^+ = -\nabla \psi_g^+ \tag{6.7.5}$$

$$\mathbf{F}^- = -m\nabla \psi_g^+ = mG\rho_g \frac{\mathbf{b}_r}{r^2} \tag{6.7.6}$$

known as *Newton*'s *Law* of Gravity for a homogeneous environment where, external to an observer, source of the fields appears as a point object and has the uniform property at every point without irregularities in field strength and direction, regardless of how the source itself is constituted with or without its internal or surface twisting torsions.

这就是著名的牛顿引力定律，适用于各向同性的环境，在每个点上都具有均匀性。作为外部观察对象，场源显示为点，无论点源本身是如何构成的，有或没有其内部或表面扭曲扭转，场强度和方向都没有不规则性。

Because of the tight coupling of electromagnetic field and gravitational field, for an physical observer, it is not difficult to see that a small mass with the "charge" effect shows mainly the electromagnetic field, while the gravitational field shows the "quantity" effect only in the domain of higher macro-density.

由于电磁场与引力场的紧密耦合，相对实验观察而论，电子质量较小的“荷性”主要表现为电磁场效应，而引力场显现“质性”效应只是在宏观高密度域才表现突出。

8. 结论 Conclusions

From First Universal Field Equations (3.9.3) and (3.9.6), the $Y^{-}Y^{+}$ fluxions are operated to give rise to the horizons where a set of continuities is instituted symmetrically to function as the horizon of *Second Universal Field Equations* (6.2.2) and (6.2.3), unifying the symmetric fields of electromagnetism, gravitation and thermodynamics.

从第一个宇宙场方程 (3.9.3) 和 (3.9.6) 出发，在这个层界面上，$Y^{-}Y^{+}$ 流动对称地建立起一组通量连续性，产生第二宇宙场方程 (6.2.2) 和 (6.2.3)，形成统一电磁、引力和热力学的对称场理论。

For the first time, the Law of Conservation of Light is revealed in the comprehensive integrity and characteristics of photon beyond its well-known nature at a constant speed. Remarkably, the Law of Conservation of Gravitation demonstrates that graviton is conserved to invariance of the Torque Transportations on world lines, given by gravitational fields of Eq (6.7.1-4), symmetrically. Our model of graviton not only quantifies concisely the graviton characteristics, but also unifies cohesively with light, electromagnetic and blackhole fields at the horizons factored by statistical thermodynamics.

光的守恒定律第一次揭示了光子的综合完整性和独特性，超越了众所周知的恒速性。值得注意的是，万有引力守恒定律证明，万有引力对称地守恒到由等式 (6.7.1-4) 的引力场给出了世界线上的力矩输运不变性。我们的引子模型不仅简明地量化了引子的特性，而且与统计热力学所考虑的层界上的光场、电磁场和黑洞场相一致。

In the center of a blackhole, a system of partial differential equations forms the entanglements of gravitational and electromagnetic fields and emerges the associated phase modulations from massive objects for internal communications. Essentially, the natural context of relativistic boost $T^{\pm}_{\mu a}$ and spiral torque $\Upsilon^{\pm}_{m\alpha}$ entanglements constitutes and acts as the sources of “photon” and “graviton” fields being operated at the heart of energy formulations of stress strengths and twist torsions, driven by the events descending from the two-dimensional world planes of the dual manifolds and the affine connections aligning to each of the superphase modulations.

在黑洞的中心，一个偏微分方程组形成了引力场和电磁场的纠缠，产生了用于内部通信的大质量物体的相位调制。从本质上讲，相对性幅度 $T^{\pm}_{\mu a}$ 和螺旋力矩 $\Upsilon^{\pm}_{m\alpha}$ 纠缠的自然背景，构成并充当了“光子”和“引子”场的来源，而“光子”和“引子”场是应力强度和变形扭转的能量公式的核心，被双流形的二维世界平面的亲合事件和对偶宫位位调制所驱动。

As an application of *Universal and Unified Field Theory*, the *Natural Cosmology* is harvested as a new theory prevailing over the current *"Physical Cosmology"* by transcending both *Einstein*'s field equations and *Friedmann* equations with the *ontological field equations* and *horizon field equations.* Positioned at the third horizon of spacetime manifold, our *cosmological field equation has not only* standardized "general relativity", but also extended the cosmological constant to the dynamic matrices of superphase modulations, dark energy waves and blackhole emissions.

作为《宇宙统一场论》的一个应用，自然宇宙的本体场方程和层界场方程形成更新的理论，从而，完全超越爱因斯坦场方程和弗里德曼方程组成的当代"物理宇宙学"。自然宇宙学场方程在阐述第三层界的时空流形时，它不仅规范了广义相对论，而且将宇宙学常数扩展到了宫位位调制、暗能量波和黑洞发射的动态矩阵。

Consequently, secrets of *Natural Cosmology are* revealed exceptionally with universal horizon infrastructure of asymmetric fields, superphase modulation, entropy of dark energy, and lightwave or gravitation fields in the forms of dispersive or non-dispersive wave-packets, which orchestrate all types of life events essential to the operations and processes of creation, annihilations, reproduction and animation for natural formations and evolutions.

特别是，自然宇宙学的秘密揭示了宇宙层场基础架构的协称场、宫位位调制、暗能量熵，以及以色散或非色散波包形式的光

子波或引子场，协调操作和形成至关重要的所有类型的生态事件过程，包括创生、湮灭、盛生和繁衍等自然形态和演化。

1. 物理宇宙学 Physical Cosmology

In November of 1915, *Albert Einstein* culminated in the presentation to the *Prussian Academy of Science* of what are now known as the *Einstein Field Equations*. These equations specify how the geometry of space and time is influenced by matter as a moving object, and form the core of General Theory of Relativity. Two years later in 1917, physical cosmology began with and wildly developed by Einstein's postulating "cosmological considerations on the general theory of relativity" under the hypothesis from his experimental thoughts, assuming a homogenous, static, and spatially curved universe. The *Einstein Field Equations are shown as the following:*

1915年11月，阿尔伯特·爱因斯坦在普鲁士科学院发表了现在被称为爱因斯坦场方程的演讲。这些方程描述了空间和时间的几何学是如何受到作为运动物体的物态影响，从而，形成了广义相对论的核心。两年后的1917年，爱因斯坦提出了"广义相对论的宇宙学考虑"，把宇宙遐想和假设为同质的、静态的和空间弯曲的一种思想实验，随后开始深入展开了物态宇宙学。爱因斯坦场方程由如下所示：

$$R_{\mu\nu} - \frac{R}{2} g_{\mu\nu} + \Lambda g_{\mu\nu} = G_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu} \qquad (7.1.1)$$

where the cosmological constance Λ was originally introduced to counterbalance the effects of gravity and achieve the model of **a static universe**. From the special theory of relativity in 1905, this "physical cosmology" took about ten years with numerous detours and false starts that fundamentally based on a simple thought experiment for an observer in free fall. Evidently, this stereotype has missed the truth of nature by a large margin. However, the theory has been excessively respected as one of the most profound discoveries of the twentieth-century physics to account for general commutation in the context of classical forces.

其中，宇宙学常数 Λ 最初是用来平衡重力的影响，并实现**静态宇宙**的模型。从1905年狭义相对论开始，这个"物理宇宙学"花了大约十年的时间，经历了无数弯路和错误的开

端，基本上是基于一个观察者在自由落体时的简单思维实验。显然，这种刻板印象在很大程度上忽略了自然性真理。然而，这一理论被过分地认为是二十世纪物理学中最深刻的发现之一，用来解释经典力背景下的普遍对异性。

During 1920s, *Alexander Friedmann, Georges Lemaître, Howard Robertson and Arthur Walker* (FLRW) derived a set of equations that govern the universe with the expansion of space in all directions (isotropy) and from every location (homogeneity) within the context of general relativity. The FLRW model declares the cosmological principle as that a universe is in homogeneous, isotropic, and filled with ideal fluid. For a generic synchronous metric in that universe, a solution to *Einstein's* field equations in a spacetime is expressed as a pair of the *Friedmann* equations：

20世纪20年代，亚历山大·弗里德曼、乔治·勒马·特雷、霍华德·罗伯逊和亚瑟·沃克 (FLRW) 在广义相对论方程下，导出了一组方程，这些方程通过空间在各个方向 (各向同性) 和每个位置 (同质性) 的扩张来支配宇宙。FLRW 模型揭示的基本原理是：宇宙是均匀的、各向同性的、充满理想的流体。对于宇宙中的一般同步度规，爱因斯坦场方程的时空解表示为一对带有哈勃参数的弗里德曼方程：

$$ds^2 = (cdt)^2 - a(t)^2\left[\frac{dr^2}{1-kr^2} + r^2 d\vartheta^2\right] \qquad : d\vartheta^2 = d\theta^2 + \sin^2\theta\, d\phi^2 \tag{7.1.2}$$

$$\frac{3}{c^2}\left(\frac{\dot a}{a}\right)^2 + 3\frac{k}{a^2} = \Lambda + \frac{8\pi G}{c^2}\rho \tag{7.1.3}$$

$$\frac{2}{c^2}\frac{\ddot a}{a} + \frac{1}{c^2}\left(\frac{\dot a}{a}\right)^2 + \frac{k}{a^2} = \Lambda - \frac{8\pi G}{c^4}p \tag{7.1.4}$$

$$v_r = H(t_0)D, \qquad H(t) \equiv \frac{\dot a}{a} \qquad : H_0 = H(t_0),\ v_r = cz,\ z = \frac{\lambda_{obsv} - \lambda_{emit}}{\lambda_{emit}} \tag{7.1.5}$$

where $H_0 = H(t_0)$ is a *Hubble* constance. In physical and cosmological observation, the movement rate of the universe is hypothetically interpreted by the model of time-dependent *Hubble* parameter $H(t)$ to describe a galaxy at distance *D* given by *Hubble Law*: $v_r = H_0 D$. Remarkably, for a constant cosmological constant Λ, the equation (7.1.3) includes only one single originating event, the mass density ρ. This is what appear as if the universe were not an explosion but the abrupt appearance of expanding spacetime metric.

其中，$H_0 = H(t_0)$ 是哈勃常数。在物理宇宙学的观测中，用 $H(t)$ 函数模型对宇宙的运动速率进行了假设性的解释：用哈勃定律 $v_r = H_0 D$ 来描述距离D的星系。值得注意的是，对于一个恒定的宇宙学常数 Λ，方程 (7.1.3) 包含了只有一个单一的始发事件，即质量密度 ρ。这看起来好像宇宙不是爆炸，而是突然出现的时空膨胀度规。

At *Pasadena* from January to February 1931, *Edwin Hubble* showed *Einstein* the redshifted nebular spectra and convinced him that the universe was in a state of expansion, and the cosmological constant was superfluous. Meanwhile, *Lemaître* went further and suggested that all the mass of the universe was concentrated into a single point, a "primeval atom" where and when the fabric of time and space came into existence. In January 1932, Einstein and *Willem de Sitter* teamed up to write what would be known as the *Einstein-de Sitter* universe, in which *Einstein* set the cosmological constant to zero $\Lambda = 0$ in the *Friedmann* equations, resulting in a model of the expanding universe known as the *Friedmann-Einstein* universe.

1931年1月至2月在帕萨迪纳，埃德温·哈勃向爱因斯坦展示了红移的星云光谱，并说服他确信宇宙处于膨胀状态，宇宙常数是多余的。同时，比利时天主教神父勒梅特 (Lemaître) 进一步假设，宇宙的所有质量都集中在一个点上，一个“原始原子”是出现时间和空间结构的开源点。1932年1月，爱因斯坦和威廉·德西特联手撰写了一部被称为爱因斯坦·德西特宇宙的著作，在这部著作中，爱因斯坦在弗里德曼方程中将宇宙常数设为零：$\Lambda = 0$，由此产生了一个被称为弗里德曼·爱因斯坦宇宙的膨胀宇宙模型。

In the 1920s and 1930s, almost every major cosmologist preferred an eternal steady state universe. However, the above historical activities led to a hypothetical universe, the "*Big Bang*", such that its inception were immediately (within 10^{-29} seconds) followed by an exponential expansion of space by a scale multiplier of 10^{27} or more, declared as cosmic inflation. From then on, the above equations become the basis of the standard *Big Bang* model as a key prediction or imagination.

在20世纪20年代和30年代，几乎每一位重要宇宙学家都首选永恒的稳态宇宙。然而，上述历史活动确导致了一个假设性宇宙：“大爆炸”，它的开源是突发的 (在10^{-29}秒内)，然后空间以 10^{27} 或更大的比例倍增指数膨胀，称为宇宙膨胀。从那时起，上述方程成为大爆炸标准模型的基础，成l了遐想和预测的要诀。

In 1949, Thirty-four years after discovery of *General Relativity*, *Einstein* claimed, “The general theory of relativity is as yet incomplete .... We do not yet know with certainty, by what mathematical mechanism the total field in space is to be described and what the general invariant laws are to which this total field is subject.” Next year in 1950, he restated “... all attempts to obtain a deeper knowledge of the foundations of physics seem doomed to me unless the basic concepts are in accordance with general relativity from the beginning.” From equations of (7.1.1), it turns out to be impossible to find a general definition for a seemingly simple property such as a system's total mass (or energy), photon or graviton; and proves to be fundamentally impossible to localize that energy. Indeed, for about a century, no *Nobel Prizes* have ever been awarded to these purely hypotheses as a “physical cosmology”.

1949年，在广义相对论被发表34年后，爱因斯坦认识到：“广义相对论对于整个领域来说还是不完整的。我们还不能确定，通过什么数学机制可以描述空间中的总场，以及这个总场是遵循什么样的普遍守恒定律…”。次年1950年，他重申“...对我来说，除非基本概念从一开始就与广义相对论一致，否则所有试图获得更深入的物理基础知识的尝试，似乎都是注定要失败的”。事实证明，对于看似简单的一些性质，如一个系统的总质量 (或能量) 、光子或引力子，在这个方程 (7.1.1)中不可能找到它们的普遍定义；并且，可以证明根本不可能将这些能量本地化。确实，历时一个多世纪以来，诺贝尔奖从未授予这些纯粹遐想性假设的“物理宇宙学”。

Since the discovery of cosmic microwave background by *Arno Penzias* and *Robert Wilson* in 1964, many of alternative models have been in proposals such as the *Lambda Cold Dark Matter* (ΛCDM) model in the 1980s, *MOND* theory in 1983, *TeVeS* theory in 2005 or *MOG* theory in 2006. By reinventing gravity, astronomers and astrophysicists attack the dark matter portions from the perspective of galaxy formation models that require modification to the *Einstein* field equations and the *Friedmann* equations. Obviously, today, the traditional interpretation has remained a serious challenge or scientific problems are unsolved.

自1964年，美国射电天文学家阿诺·彭齐亚斯 (Arno Penzias) 和罗伯特·威尔逊 (Robert Wilson) 发现了宇宙微波背景辐射以来，已有许多替代模型被提出，如1980年代的 Lambda 冷暗物质 (CDM) 模型、1983年的 MOND 理论、2005年的 TeVeS 理论、和2006年的 MOG 理论。通过重塑引力，天文学家和天体物理学家从星系形成模型的角度来探索暗物质，这些模型需要修改爱因斯坦场方程和弗里德曼方程。显然，在今天，利用传统遐想思想来圆说，仍然是当代科学尚未解决的严重问题和挑战。

Philosophically, limited in its decoherence interpretations or physical existence only, a duality of the physical-virtual dynamics and their event interweaving have been hidden in our current physics. Therefore, the hypothetical model of *Big Bang* has the apparent blindness to the following artifacts:

在哲学上讲，物性和虚态运动及其事件交织的二象性根本不显现在当代物理学中，仅局限于退相干解释，以及仅有物态的存在性，使得人为盲目性形成了大爆炸的假设模型，明显具有以下的盲点：

1. *Cosmological field equation - Evidenced by the observable universe empirically, the Einstein's field equation (7.1.1) is incomplete, because the outright equations must interpret the obvious characteristics or emissions of cosmic waves from gravitons, photons, dark or quantum energies. Lack of a profound philosophy and limited by the free-fall thought experiments, the newborn equation had been improperly led to unrealistic interpretations and especially carried on to its inherit models: Friedmann equations.*

   宇宙场方程 - 由可观测的宇宙经验证明，爱因斯坦的场方程 *(7.1.1)* 是不完整的，因为，正确的方程必须解释从引力、光子、暗能量或量子能量所表征的宇宙辐射波发射。由于缺乏深刻的哲学思想和受限于自由落体遐想

实验，初生方程被错误地引向了不切实际的解释，尤其是其继承和引发了进一步模型：弗里德曼方程。

2. *Horizon structure - Although the FLRW (7.1.2-4) is well developed to align with the conceptual horizons between the regimes of world planes and spacetime, a physical reality is hardly modeled as a hierarchical structure, wherein every possible outcome is not realized or rising from horizons, gracefully. For example, states of matter are aged or timeworn from the two-dimensional coordinates on World Planes to the tetrad-coordinates on Spacetime Manifolds, but may not be uniformly on both.*

   层界结构 - 尽管 *FLRW (7.1.2-4)* 已经很好地发展到与世界平面和时空之间的层界概念相一致，但物理模型很难被建模为一个层次结构，其中每一个可能的演化都没有能从层界中优雅地升起。例如，物质状态的进程是从世界平面上的二维坐标过度到时空流形上的四维坐标，在这两个进程上可以是非等同的。

3. *Single metric - Similar to the entire practice of current physics, almost all theories have sticked to one choice of a single metric (+ − − −) regardless of the other (− + + +) conjugation, although both are discovered since 1908. Consequently, any behaviors with the two "relative states" is "collapsed" at its physical state with the same collapsed or static outcome, or simply without interweaving dynamics. This is inevitably resulted in and given by the empirical methodology, shown by formula (1.1.1).*

   单度规 - 类似于当前物理学的整个实践，几乎所有的理论都坚持选择一个度规 *(+---)*，而不考虑其相关的 *(-++++)* 共轭度规，尽管这两个度规早在*1908*年就发现了，可惜的是，具有两个“相对状态”的任何行为，都“塌陷”成一个物理状态，形成相同的塌陷或静态结果，导致了没有纠缠的动态学。这就是用经验方法论公式（*1.1.1*）所导致和得出的必然结果。

4. *Frozen statically or Inflation dynamically - Ironically, blindness to the fact that General Relativity (7.1.1) can be given by the commutator at its statically frozen state, its solution of the FLRW model has led to the*

well-known hypotheses: Big Bang, which is dynamically Inflation and ever expanding! Obviously, it is the contradict theory by itself： statically frozen state ever expanding Inflation dynamically!

静态冻结还是动态膨胀 - 具有讽刺意味的是，由于忽视了广义相对论 *(7.1.1)* 的前提是在其静态冻结状态下通过对易给出的事实，*FLRW* 模型对它的进一步求解导致了著名的假设：大爆炸，它是不断动态地膨胀！显然，这理论本身就是自相矛盾：静态冻结状态在永恒和不断地动态膨胀！

5. *Cosmic Singularity and Inflation - Since the mathematical principles is ambiguous, enigmatic or contradict among themselves in current physics, it might be superfluous in deliberating the affection to what means to the early universe dating to the epoch of recombination. Especially under the inexplicable philosophy, one has invented an incredible burst expansion at temperatures from 100 nonillion (10^{32}) Kelvin down to 1 billion (10^{9}) Kelvin, imagined inflation of the universe, and attempted to reconcile the cosmic data with the Big Bang hypothesis from the flawed foundation of singularity.*

   宇宙的奇异性和膨胀 - 在当前的物理学中，由于数学原理性是模棱两可的、神秘的或相互矛盾的，在考虑对早期宇宙的影响时，多此一举地追溯到宇宙重组时代；特别是在莫名其妙的哲学下，人们创造了一个难以置信的爆发扩张，从*100*个*100*万的*9*次方 *(10^{32})* 凯氏温度降至*10*亿 *(10^{9})* 凯氏温度，人为想象宇宙膨胀，并从奇异点的缺陷基础上，试图调和宇宙数据支持大爆炸假说。

Apparently, the current approaches have resulted in and limited itself towards the decoherence interpretations or physical existence only. Without the most distinctive features of the universe, it deviates significantly from the *Universe Topology* of the horizon hierarchy and of the $Y^{-}Y^{+}$ interwoven operations that lies at the heart of all life streams of events, instances or objects, essential to the workings of our universe.

显然，目前的研究方法只局限于退相干解释的物理存在性，既然，缺乏宇宙最显然的特征，它就大大偏离了层次性宇宙拓扑结构和阴阳性互动操作，而这些操作是所有事件、实例或物态生命流的核心，是我们宇宙的运行至关要点。

In mathematics, this means that, instead of a single manifold, a oneness of the real world of our universe must be modeled by a duality of the conjugate $\{\mathbf{r} \pm i\mathbf{k}\}$ *World Planes*. However, the entanglement of world lines is collapsed to the equation of (3.3.1b) as the following:

在数学中，这意味着，我们宇宙的真实世界的一体性，必须由共轭的$\{\mathbf{r} \pm i\mathbf{k}\}$世界平面的二象性流形来模拟，决不是单一流形。显然，世界线的纠缠被折叠成 (3.3.1b) 式，如下所示：

$$(i\Delta s)^2 = (\Delta r - i\Delta k)(\Delta r + i\Delta k) \mapsto (\Delta r)^2 - (c\Delta t)^2 \qquad : k = ct \qquad (7.1.6)$$

where i represents a virtual state of matter or instance. Besides, more critically, the current physics has the total ignorance to or not a bit of the basic principles of the *Operational Events between the virtual and physical* reality.

这里，i 代表事态或事例的虚拟状态。此外，更为关键的是，当前的物理学完全忽视了或根本没有虚态现实与物态现实之间操作事件的基本原理。

2. 协称性 Asymmetry

In reality, the laws of nature strike aesthetically a harmony of duality not only between $Y^{-}Y^{+}$ symmetries, but also between symmetry and asymmetry. Because of the $Y^{-}Y^{+}$ duality, a symmetric system naturally consists of asymmetric ingredients or asymmetric constituents. Symmetry that exists in one horizon can be cohesively asymmetric in the other simultaneously without breaking its original ground symmetric system that coexists with its reciprocal opponents. A universe finely tuned, almost to absurdity, is a miracle of asymmetry and symmetry together that give rise to the next horizon where a new symmetry is advanced and composed at another level of consistency and perpetuation. Similar to the $Y^{-}Y^{+}$ flux commutation and continuity of potential densities, a duality of symmetry and asymmetry represents the cohesive and progressive evolutions aligning with the working of the topological hierarchy of our nature.

事实上， 由于阴阳二象性，自然法则不仅表现在对称性之间，而且在对称性与协称性之间，都完美的达到了二象性的和谐，对称系统自然由协称要素和协称成分组成。存在于一个层界中的对称性可以同时在另一个层界和谐地协称，而不打破它自身对称性与对偶协称的共存体系。不可思议的是，一个精密调制的宇宙是一个协称和对称的奇迹组合，它们共同产生了下一个层界，在这个层界中的对称进程，组成了另一个紧密性和永久性的新层界。与势气密度的阴阳交换和连续性类似，对称和协称的对偶二象性，表明了自然拓扑结构的巧夺天工，形成内在连贯性的渐进演化过程。

In physics, we define two types of asymmetric dynamics: *Ontology* for the massless objects, and *Cosmology* for massive matters with the further interrelations as the following:

在物理学中，我们定义了两种类型的协称动态学：无质量对象的本体论和物质对象的宇宙学，其进一步的相互关系如下：

1. *Because of the massless phenomena or dark objects, Ontology is intrinsic, evolutionary, dominant and explicit at the first and second horizons. As the actions of the scalar potential fields, it characterizes interrelationships of the living types, properties, and the natural entities that exist in a primary domain of being, becoming, existence, or reality. It compartmentalizes the informational discourse or theory required for sets of formulation and establishment of the relationships between creation and reproduction, and between animation and annihilation.*

   由于无质量事件或暗模块的存在，本体论在第一和第二层界具有内在性、演化性、主宰性和确定性。作为标量势气场的相互作用，它刻画了生态类型的自然特性和属性为标志的生命、变化、存在、或现实之间的相互关系。它有机地规范和建立了，创造与繁衍、盛生和化归之间的关系，以及所需信息流的理论模块群。

2. *Natural Cosmology is the living behaviors, motion dynamics, and interrelationships of the large scale natural matter or supernovae that exist in the evolution and eventual trends of the universe as a whole. At the third horizon and beyond, the vector potentials compartmentalizes the infrastructural discourse or theory required for sets of formulation and constitution of the relationships between motion and dynamics, and between universal conformity and hierarchy.*

   自然宇宙学研究的是，存在于宇宙整体演化和终极趋势中的大型自然事件或超新星的生命行为、运动状态和相互关系。在第三层界和更高层界，规范了向量势气场，将运行与动力、宇宙整体与层界之间的相互关系，与所需基础结构表述的理论模块群，区分了开来。

The scope of this chapter is at where, based on *universal symmetry*, a set of formulae is constituted of, given rise to and conserved for ontological and cosmological horizons *asymmetrically*. Through the performances of the $Y^{-}Y^{+}$ symmetric actions, laws of conservation and continuity determine the asymmetric properties of interruptive transformations, dynamic transportations, entangle commutations, photon, graviton or dark fields of *Ontology* and stellar galaxy evolutions of *Cosmology*.

本章的范围是在宇宙对称的基础上，为本体论和宇宙学的协称层界建立一套形成、产生和守恒的公式。通过阴阳对称互动的特征性，守恒律和连续性决定了本体论的协称性质，包括互辅转换、动态输运、纠缠变易、光子引子、或暗能量场，以及宇宙中恒星-星系演化，等等。

Asymmetry is an event process capable of occurring at a different perspective to its symmetric counterpart. The natural characteristics of the $Y^{-}Y^{+}$ asymmetry have the following basic properties:

协称是一个事件过程，它能够从不同的角度，与对称发生相对互动和相辅相成的作用。协称的阴阳自然特征具有以下基本性质：

1. *Associated with its opponent potentials of scalar fields, an asymmetric system is a dark fluxion flowing dominantly in one direction without its mirroring or equivalent fluxion from the other, although the interaction is a pair of $Y^{-}Y^{+}$ entanglements.*

   与对耦标量势气场相联系，协称系统是一个暗流，虽然相互作用是一对阴阳纠缠，但它主导在一个方向上的流动，没有等效镜像反射的反流动。

2. *The scalar fields are virtual supremacy at the first and second horizons, where objects are the massless instances, actions or operations, known as dark energy. Conceivably, an asymmetric structure of physical system is always accompanied or operated by the dark energies.*

   标量场在第一和第二层界是由虚态主导的，其对象是无质量的事例、行为或操作，也称为暗能量。可以想象，一个物理系统的协称性结构总是伴随着暗能量并被暗能量所操作的过程。

3. *Asymmetry is a part of components to the symmetric fluxions of the underlining transform and transport infrastructure cohesively and persistently aligning with its systematic symmetry.*

协称性是对称流动的一个组成部分，形成一种底层转换和运输的基础设施，始终与对称性保持一致性和持续性。

4. *As a duality of asymmetry, the Y^- or Y^+ operation is another part of components for the dual asymmetric fluxions of the base infrastructure consistently aligning with the underlying Y^- or Y^+ symmetry.*

   作为协称的二象性，阴或阳操作是双重协称流动的另一个部分，与基础设施的阴或阳对称性一致。

5. *Both of the Y^- and Y^+ asymmetries have the laws of conservation consistently and perpetually, that orchestrate their respective continuity locally and harmonize each other's movements externally in progressing towards the next level of symmetry.*

   阴或阳的协称都具有持续一致的守恒定律，它们在局部协调着各自的连续性，并在外部协调着彼此的交互运动，逐步形成下一个层面的对称性。

The *World Equations* of (3.4.5) can be updated and generalized in terms of a pair of the Y^- and Y^+ asymmetric scalar fields, vector fields, matrix fields, and higher orders of the tensor fields, shown straightforwardly as:

世界方程 (3.4.5) 可以用一对阴和阳协称标量场、向量场、矩阵场和张量场的高阶来引升和拓展，可以直接表示为：

$$W_b = W_0^{\pm} + \sum_n h_n \left\{ \kappa_1 \left(\dot{\partial}_{\lambda^1} \right)^{\pm} + \kappa_2 \dot{\partial}_{\lambda_2} \left(\dot{\partial}_{\lambda^1} \right)_s^{\pm} + \kappa_3 \dot{\partial}_{\lambda_3} \left(\dot{\partial}_{\lambda^2} \right)_v^{\pm} \cdots \right\} \qquad (7.2.1)$$

where κ_n is the coefficient of each order n of the λ^n event. Defined by the *equations of* (3.7.6-9), the symbol $(\ )_o^{\mp}$ implies asymmetry of a Y^--supremacy or a Y^+-supremacy with the lower index *s* for scalar fields, v for vector fields and $_M$ for matrix tensors:

其中，κ_n 是各阶 *n* 事件 λ^n 的系数。由 (3.7.6-9) 定义的协称 符号$(\ )_o^{\mp}$，表示以阴主导或阳主导的协称性，标量场用下标 *s* 表示，向量场用下标 v 表示，矩阵张量用下标 *m* 表示：

$$\left(\dot{\partial}_\lambda \right)_s^+ \equiv \psi_n^+ \dot{\partial}_\lambda \psi_n^-, \qquad \left(\dot{\partial}_\lambda \right)_s^- \equiv \psi_n^- \dot{\partial}_\lambda \psi_n^+ \qquad (7.2.2)$$

$$\left(\dot{\partial}_\lambda\right)_v^+ \equiv \psi_n^+ \dot{\partial}_\lambda V_n^-, \qquad \left(\dot{\partial}_\lambda\right)_v^- \equiv \psi_n^- \dot{\partial}_\lambda V_n^+ \qquad (7.2.3)$$

Because the above equations contain a pair of the scalar density fields $\varrho_\phi^{\pm n} = \psi_n^\mp \psi_n^\pm$ or vector fluxions $\mathcal{J}_v^{\pm n} \propto \psi^\mp V^\pm$ as one-way commutation without the symmetric engagement from a pair of its reciprocal fields, they institute the fluxion fields as Y^--asymmetry or Y^+-asymmetry, complementarily.

由于，上述方程组包含了一对标量密度场 $\varrho_\phi^{\pm n} = \psi_n^\mp \psi_n^\pm$ 或矢量流 $\mathcal{J}_v^{\pm n} \propto \psi^\mp V^\pm$ 作为单向变异，而不包含对称性啮合的一对共轭场，故将流动场称为互补型阴协称或阳协称场。

For asymmetric evolutions or acceleration forces, the underlying system of the symmetric commutations and continuities do not change, but the motion dynamics of the world lines as a whole changes. In this view, the Y^-Y^+ entanglements are independent or superposition at each of the “ontological” primacy during their formations. Obviously, asymmetry occurs when a fluxion flows without a correspondence to its mirroring opponent. In reality, as a one-way streaming of a supremacy, an Y^- or Y^+ asymmetric fluxion is always consisted of, balanced with, and conserved by its conjugate potentials as a reciprocal opponent, resulting in motion dynamics, creation, annihilation, animation, reproduction, etc.

对于协称演化或加速力，对称交换和连续性的基本局域系统不变，但世界线上运动态作为一个整体却发生了变化。从这一观点看，在其形成过程中，阴阳纠缠是独立的或以各个“本体”域自主的前提下进行超引。很明显，当流动与镜像对象没有对应关系时，就会发生协称运动。实际上，作为阴或阳主导协称流动的单向流动时，总是伴随、平衡和守恒于其对偶共轭势气场，从而，产生运动状态的创造、湮灭、盛生和繁衍，等。

Most of galaxies have its topological hierarchy that operates interruption between physical and virtual worlds. Our milky way for example, the galactic center communicates with *Earth* through *Sun* of solar system. This is because *Sun* is at a horizon of the topology between *Earth* and the center blackhole. Topologically, a galactic center is virtually at the first horizon, the *Sun* is semi-virtually at the second horizon, and the *Earth* is physically at the third horizon. Because, between the second and third horizon, *Riemannian* curvature is $\mathscr{R}^{\sigma}_{\nu ms} \neq 0$, our *Sun* is orbiting its center of *Milky* way, and so is the *Earth* orbiting in solar system, dynamically.

大多数星系都有自己的拓扑结构，在物态世界和虚态世界之间进行交互运行。例如，我们银河系的中心通过太阳系的太阳与地球相通，这是因为太阳处于地球和银河中心黑洞之间拓扑结构的一个层界上。从拓扑学上讲，银河系中心实际上位于第一层界，太阳位于异态域的第二层界，而地球实态域位于第三层界。因为，在第二层和第三层界之间，黎曼曲率是 $\mathscr{R}^{\sigma}_{\nu ms} \neq 0$，所以，我们的太阳正在围绕它的银河系中心运行，同样，地球也是围绕着太阳系中心运行。

However, between the first and second horizon, *Riemannian* curvature is zero $\mathscr{R}^{\sigma}_{\nu ms} = 0$ or disappeared. Therefore, our galaxy center is naturally eternal and rotationally point-steady, shown by the interpretational details of the following sections.

然而，在第一层和第二层之间，黎曼曲率消失为零 $\mathscr{R}^{\sigma}_{\nu ms} = 0$。因此，我们的星系中心自然是永恒的定点稳定旋转，有如下章节详细阐述。

As a part of the symmetric components, fluxions not only are stable and consistent but also can dictate its own system's fate by determining its dynamic motion lines taken on the world planes. Therefore, the two entanglers of symmetry and asymmetry have the freedom to control each of their own operations, asynchronously, independently and cohesively - another stunning example of the workings of the remarkable nature of our universe.

作为由对称组成的一个分量部分，各流动不仅是稳定一致的，而且可以通过确定其在世界平面上的动态运动线来决定系统的命运。因此，对称和协称这两种纠缠可以自由地、异步地、独立地和连贯地控制它们各自操作，这是我们宇宙非凡自然性的又一个惊人杰作。

3. 广义协称场 General Asymmetric Fields

For asymmetric fluxions, the entangling invariance requires that their fluxions are conserved with motion acceleration, operated for creation and annihilation, and maintained by reactive forces. Normally, the divergence of Y^- fluxion is conserved by the virtual forces 0^+ and the divergence of Y^+ fluxion is balanced by physical motion of dynamic curvature. Together, they maintain each other's conservations and commutations cohesively, reciprocally and complementarily.

对于协称流动，缠绕不变性要求其流动与运动加速度保持守恒，操作运行的创生和淹没过程，由反作用力来维持平衡。通常，阴流散度由虚态力 0^+ 守恒，阳流散度由动态曲率的物理运动平衡。它们协同地、对偶地和互补地维护着彼此间的守恒和对易。

Under the environment of both Y^-Y^+ manifolds for a duality of fields, the event λ initiates its parallel transport and communicates along a direction at the first tangent vectors of each Y^+ and Y^- curvatures. Following the tangent curvature, the event λ operates the effects transporting $(\check{\partial}^\lambda, \hat{\partial}_\lambda)$ into its opponent manifold through the second tangent vectors of each curvature, known as *Normal Curvature or* perpendicular to the fist tangent vectors. The scalar communicates are defined by the *Commutator* and Continuity *Bracket* of the (3.7.1-3) equations. From two pairs of the scalar fields (7.2.3), asymmetric fluxions consist of and operate a pair of the commutative entanglements consistently and perpetually. Based on the *Third Universal Field Equations*, the Y^-Y^+ acceleration fields contrive a pair of the following commutations, equivalent to equations (3.10.1-2).

对偶场在两个 Y^-Y^+ 流形环境下，将事件 λ 沿着一个每个 Y^+ 和 Y^- 曲率的第一个切向量方向处，启动其平行传输和通信。顺着切线曲率，事件 λ 操作通过每个曲率的第二个切线向量 (称为法曲率或垂直于第一个切线向量) 用 $(\check{\partial}^\lambda, \hat{\partial}_\lambda)$ 传输到其对耦流形中。标量通信是由 (3.7.1-3) 方程的对易性和连续性括号来定义，在两对标量场 (7.2.3) 中，协

称流持续不断地组成和操作一组对易纠缠。基于第三个宇宙场方程，Y^-Y^+ 加速度场促成了如下一组对易，等价于方程 (3.10.1-2) 。

$$\mathbf{g}_a^-/\kappa_g^- = \left[\check{\partial}^\lambda\check{\partial}^\lambda, \hat{\partial}_\lambda\hat{\partial}_\lambda\right]_x^- + \zeta^+ \qquad : \zeta^+ = \left(\hat{\partial}_\lambda(\check{\partial}^\lambda - \check{\partial}_\lambda)\right)_x^+ \qquad (7.3.1)$$

$$\mathbf{g}_x^+/\kappa_g^+ = \left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right]_x^+ + \zeta^- \qquad : \zeta^- = \left(\hat{\partial}^\lambda(\check{\partial}^\lambda - \check{\partial}_\lambda)\right)_x^- \qquad (7.3.2)$$

where the index $x \in \{s, v\}$ refers to the scalar or vector potentials. Named as ***Equations of General Asymmetric Fields***, the formulae is balanced by a pair of commutation of the asymmetric Y^-Y^+ entanglers $\zeta^\mp$ that constitutes the laws of conservations universal to all types of Y^-Y^+ interactive motions, curvatures, dynamics, forces, accelerations, transformations, and transportations on the world lines of the dual manifolds.

其中，$x \in \{s, v\}$ 可表述标量或矢量势气场。定义为**广义协称场方程**，这个公式是由一组协称的 Y^-Y^+ 纠缠子 $\zeta^\mp$ 的对易来平衡，在双流形世界线上，构成了所有类型的 Y^-Y^+ 相互作用的运动、曲率、动态、力、加速度、变换和输运等普适性守恒定律。

As the horizon quantity of an object, a vector field forms and projects its motion potentials to its surrounding space, arisen by or acting on its opponent through a duality of reciprocal interactions. Because of the vector transportation, both of the boost and spiral communications give rise to various tensors of the horizon fields aligned with the motions of dynamic curvatures and beyond. When an object has a rotation on the antisymmetric manifolds of the world $\{\mathbf{r} \pm i\mathbf{k}\}$ planes, the event naturally operates, constitutes or generates Torsions, twisting on the dual dynamic resources and appearing as the *Centrifugal* or *Coriolis* compulsion on the objects such as triplets of particles, earth, and solar system. At the third horizon, acting upon the vector fields of $\zeta^\mu D^\mu$ and $\zeta_\nu D_\nu$, the event operates and gives rise to the tangent curvatures and vector rotations of the communications, defined by the commutators of the (3.7.7-8) equations.

作为层界量的一个对象，矢量场通过二象性的相互作用，形成并投射其运动势气到其周围的空间，由其互易产生或作用于它的对偶。由于矢量传输，无论是幅度推进通信，还是相度纠缠螺旋，都会产生与动态曲率等运动一致的各个场张量。当一个物体在

世界 $\{\mathbf{r} \pm i\mathbf{k}\}$ 平面上的反对称流形上旋转时，该事件自然而然地运行、构成或产生扭转，在双重动行资源上扭曲和纠缠，并表现为离心力或科里奥利 (Coriolis) 压强，作用于三态粒子、地球和太阳系等物体。在第三层界，通过作用于 $\zeta^{\mu}D^{\mu}$ 和 $\zeta_{\nu}D_{\nu}$ 的矢量场，事件运行产生了通信的切线曲率和矢量旋转，由 (3.7.7-8) 方程定义为交互对易。

4. 对易子结构 Framework of Commutators

At the second horizon of the event evolutionary processes, the local tangent curvature of the potential vectors through the next tangent vector of the curvature, the λ events of the above $\hat{\partial}$ and $\check{\partial}$ operations, gives rise to the *Third Horizon Fields*, shown by the ontological expressions:

事件在第二个层界的演化过程中，势气向量的局部切曲率通过曲率的下一个切向量(即上述 $\hat{\partial}$ 和 $\check{\partial}$ 的事件操作) 产生第三层界，由本体论表达式表示为：

$$\check{\partial}_\lambda \check{\partial}_\lambda \psi^- = \dot{x}_m \left(\partial_m - \Gamma^{-s}_{nm}\right) \dot{x}_s \partial_s \psi^- \quad (7.4.1)$$

$$\hat{\partial}^\lambda \hat{\partial}^\lambda \psi^+ = \dot{x}^\nu \left(\partial^\nu - \Gamma^{+\sigma}_{m\nu}\right) \dot{x}^\sigma \partial^\sigma \psi^+ \quad (7.4.2)$$

For mathematical convenience, the ζ^ν-matrices are hidden and implied by the mappings to the derivatives of $\dot{x}^\nu$ and $\dot{x}^\nu$ as the relativistic transformations：

出于数学上的便利，隐含着的 ζ^ν-矩阵，是通过映射到 $\dot{x}^\nu$ 和 $\dot{x}^\nu$ 的导数，作为相对变换来表示：

$$\hat{\partial}^\lambda : \dot{x}^\nu \mapsto \hat{\partial}_\lambda : \dot{x}_a \zeta^\nu \qquad \check{\partial}_\lambda : \dot{x}_m \mapsto \check{\partial}^\lambda : \dot{x}^\alpha \zeta_m \quad (7.4.3)$$

The events operate the local actions in the tangent space of the scalar fields relativistically, where the scalar fields are given rise to the vector fields and its vector fields are further given rise to the matrix fields.

这些事件以相对论效应作用于标量场的切空间中，从而，标量场转化为矢量场，其矢量场进一步升华为矩阵场。

In a parallel fashion, through the tangent vector of the third curvature, the events of the fully-differential $\hat{\partial}$ and $\check{\partial}$ operation continuously entangle the vector fields and gives rise to the next horizon fields, shown by the cosmological formulae:

运用同理推演，通过第三曲率的切向量，全微分 $\hat{\partial}$ 和 $\check{\partial}$ 操作的事件，不断地纠缠矢量场并产生下一个层界，形成宇宙学公式，如下：

$$\check{\partial}_\lambda \check{\partial}_\lambda V_m = \dot{x}_\nu \left(\partial_\nu - \Gamma^{-n}_{\mu\nu}\right) \dot{x}_n \left(\partial_n V_m - \Gamma^{-s}_{mn} V_s\right) \quad (7.4.4)$$

$$\hat{\partial}^\lambda \hat{\partial}^\lambda V^\mu = \dot{x}^n \left(\partial^n - \Gamma^{+\nu}_{mn}\right) \dot{x}^\nu \left(\partial^\nu V^\mu - \Gamma^{+\sigma}_{\mu\nu} V^\sigma\right) \quad (7.4.5)$$

As an integrity, they perform full operational commutations of vector boosts and torque rotations operated between the Y^-Y^+ world planes. Because the event processes continue to build up the further operable and iterative horizons of the associated rank-n tensor fields, a chain of these reactions constitutes various domains, each of which gives rise to the distinct field entanglements, systematically, sequentially，harmoniously and simultaneously.

作为一个整体，它们以矢量场的幅度推进和相度扭矩，在 Y^-Y^+ 世界平面之间进行循环转换，执行全方位交互对易的操作。由于事件过程不断地演化层界相关的n-秩张量场，逐步地建立可操作和迭代的层界，这些连锁反应构成了各类不同的区域，每个域的纠缠场都具有系统性、渐进性、协调性、和同步性。

5. 标量对易子 Scalar Commutator

For entanglement between $Y^{-}Y^{+}$ manifolds, considering the parallel transport of a *Scalar* density of the fields $\rho=\psi^{+}\psi^{-}$ around an infinitesimal parallelogram. The chain of this reactions can be interpreted by (7.4.1-5) to formulate a commutation framework of *Physical Ontology*. This entanglement consists of a set of the unique fields, illustrated by the following components of the *entangling commutators,* respectively:

对于 $Y^{-}Y^{+}$ 流形之间的纠缠，考虑标量场密度 $\rho=\psi^{+}\psi^{-}$ 在无穷小平行四边形周围的平行传输链，这种反应链可以用 (7.4.1-5) 来解释，从而形成一个物态本体论的一种对易交互框架。这种纠缠组成一系列独特的场，由对易纠缠的交换子群，分别由以下组群部分表明：

$$\left[\check{\partial}_{\lambda}\check{\partial}_{\lambda},\hat{\partial}^{\lambda}\hat{\partial}^{\lambda}\right]_{s}^{-}=\dot{x}_{\nu}\dot{x}_{m}\left(P_{\nu m}+G_{m\nu}^{\sigma s}\right) \tag{7.5.1}$$

$$P_{\nu m}\equiv\frac{1}{\dot{x}_{\nu}\dot{x}_{m}}\left[(\dot{x}_{\nu}\partial_{\nu})(\dot{x}_{m}\partial_{m}),(\dot{x}^{\nu}\partial^{\nu})(\dot{x}^{m}\partial^{m})\right]_{s}^{-} \tag{7.5.2}$$

$$G_{m\nu}^{\sigma s}=\frac{1}{\dot{x}_{\nu}\dot{x}_{m}}\left[\dot{x}^{\nu}\Gamma_{m\nu}^{+\sigma}\dot{x}^{\sigma}\partial^{\sigma},\dot{x}_{m}\Gamma_{nm}^{-s}\dot{x}_{s}\partial_{s}\right]_{s}^{-} \tag{7.5.3}$$

$$\left[\hat{\partial}_{\lambda}\hat{\partial}_{\lambda},\check{\partial}^{\lambda}\check{\partial}^{\lambda}\right]_{s}^{+}:\ (\hat{\partial}^{\lambda},\dot{x}^{\nu})\mapsto(\hat{\partial}_{\lambda},\dot{x}_{a}\zeta^{\nu}),\ (\check{\partial}_{\lambda},\dot{x}_{m})\mapsto(\check{\partial}^{\lambda},\dot{x}^{\alpha}\zeta_{m}) \tag{7.5.4}$$

The Ricci curvature $P_{\nu\mu}$ is defined on any pseudo-Riemannian manifold as a trace of the Riemann curvature tensor, or a sum of the n-1 sectional curvatures of the n-dimensional Riemannian manifolds, introduced in 1889. The $G_{m\nu}^{s\sigma}$ is *Torsion of an Affine Connection* on a differential manifold, a rotational stress of the transportations.

这里，里奇曲率 (Ricci curvature) $P_{\nu\mu}$ 被定义为黎曼曲率张量的迹，也是n-维黎曼流形的n-1个截面曲率的和，于1889年引入。$G_{m\nu}^{s\sigma}$ 是微分流形上一个亲合连接的扭转矩，也是一个运输中的旋转应力。

Considering a system with the boost $\zeta \mapsto \gamma$ feature only in a free space or vacuum at the constant speed, the above equations become at and simplified as the motion dynamics: commutator, shown as the following:

在自由空间或真空中，考虑以恒定速度以幅度运行的系统 $\zeta \mapsto \gamma$，上述方程可以简化地变换成运动动态学方程：对易子，如下表述：

$$\left[\check{\partial}_\lambda \check{\partial}_\lambda, \hat{\partial}^\lambda \hat{\partial}^\lambda\right]_s^- = \dot{x}_\nu \dot{x}_m \left(\frac{R}{2} g_{\nu m} + G_{m\nu}^{\sigma s}\right) \qquad : \{\phi^-, \varphi^+\} \tag{7.5.5}$$

$$P_{\nu m} = R_{\nu m} = \frac{R}{2} g_{\nu m} \tag{7.5.6}$$

$$R_{\nu m} = \left[(\dot{x}_\nu \partial_\nu)(\dot{x}_m \partial_m), (\dot{x}^\nu \partial^\nu)(\dot{x}^m \partial^m)\right]_s^- \equiv R_{\nu m}(\hat{\partial}^\lambda, \check{\partial}_\lambda) \tag{7.5.7}$$

$$G_{m\nu}^{s\sigma} = \overset{+}{\Gamma}{}_{m\nu}^{s} \partial^s - \overset{-}{\Gamma}{}_{nm}^{\sigma} \partial_\sigma \equiv G_{m\nu}^{s\sigma}(\hat{\partial}^\lambda, \check{\partial}_\lambda) \tag{7.5.8}$$

Like the metric itself, the *Ricci* tensor *R* is a symmetric bilinear form on the tangent space of the manifolds. Both $R_{\nu m}$ and $G_{m\nu}^{\sigma s}$ are the residual tensors with the local derivatives $\{\hat{\partial}^\lambda, \check{\partial}_\lambda\}$. Similarly, its counterpart exists as the following:

与度规本身一样，里奇张量 *R* 在流形切空间上是对称双线性形式。$R_{\nu m}$ 和 $G_{m\nu}^{\sigma s}$ 都是驻域张量，具有局域导数 $\{\hat{\partial}^\lambda, \check{\partial}_\lambda\}$。同样，其对偶共轭也有如下公式：

$$\left[\hat{\partial}_\lambda \hat{\partial}_\lambda, \check{\partial}^\lambda \check{\partial}^\lambda\right]_s^+ = \dot{x}_\nu \dot{x}_m \left(\tilde{R}_{\nu m} + \tilde{G}_{\nu m}^{s\sigma}\right) \qquad : \{\phi^+, \varphi^-\} \tag{7.5.9}$$

$$\tilde{R}_{\nu m} = R_{\nu m}(\hat{\partial}_\lambda, \check{\partial}^\lambda) \qquad \tilde{G}_{\nu m}^{\sigma s} = G_{\nu m}^{\sigma s}(\hat{\partial}_\lambda, \check{\partial}^\lambda) \tag{7.5.10}$$

$$\hat{\partial}_\lambda = X^\sigma{}_\nu \partial^\sigma, \qquad \check{\partial}^\lambda = X_\sigma{}^\nu \partial_\sigma \tag{7.5.11}$$

where the *Ricci* curvature $R_{\nu m}$ and connection torsion $G_{\nu m}^{s\sigma}$ are mapped to the event transformations $\{\hat{\partial}_\lambda, \check{\partial}^\lambda\}$. Both $\tilde{R}_{\nu m}$ and $\tilde{G}_{m\nu}^{s\sigma}$ are the interactive tensors with the relativistic derivatives $\{\hat{\partial}_\lambda, \check{\partial}^\lambda\}$.

其中，里奇曲率 $R_{\nu m}$ 和连接扭转矩 $G_{\nu m}^{s\sigma}$ 被映射成事件变换 $\{\hat{\partial}_\lambda, \check{\partial}^\lambda\}$。$\tilde{R}_{\nu m}$ 和 $\tilde{G}_{m\nu}^{s\sigma}$都是相互作用张量，并具有相对性导数 $\{\hat{\partial}_\lambda, \check{\partial}^\lambda\}$。

The curvature measures how movements ($\dot{x}$ and $\ddot{x}$) under the $Y^- Y^+$ *Scalar Fields* $\{\phi^-, \varphi^+\}$ and $\{\phi^+, \varphi^-\}$ are balanced with the inherent stress $G_{m\nu}^{s\sigma}$ during a parallel transportation between the Y^-Y^+ manifolds. The equation represents the Y^-Y^+ *Scalar Commutation of Residual Entanglement.*

里奇曲率标示着阴阳 (Y^-Y^+) 标量势气场 $\{\phi^-, \varphi^+\}$ 和 $\{\phi^+, \varphi^-\}$ 下的运动 ($\dot{x}$ 和 $\ddot{x}$) 状态，是如何在阴阳 (Y^-Y^+) 流形之间的平行传输过程中，与固有应力 $G_{m\nu}^{s\sigma}$ 相平衡。该方程表示了驻域纠缠的阴阳 (Y^-Y^+) 标量的对易交换。

6. 矢量对易子 Vector Commutator

In natural cosmology, the vector communications under physical primacy generally involve both boost and spiral movements entangling between the $Y^{-}Y^{+}$ manifolds. Considering the parallel transport around an infinitesimal parallelogram under the dual *Vector* fields of V^{μ} and V_{m}, the entanglements are given by (7.4.4-5) as the following formulae:

在自然宇宙学中，物理优势条件下的矢量通信，通常包括阴阳 ($Y^{-}Y^{+}$) 流形之间缠绕的幅度激励和相度螺旋运动。考虑到在 V^{μ} 和 V_{m} 双矢量场下绕无穷小平行四边形的平行输运，纠缠度由 (7.4.4-5) 式给出如下公式群：

$$\left[\check{\partial}_{\lambda}\check{\partial}_{\lambda}, \hat{\partial}^{\lambda}\hat{\partial}^{\lambda}\right]_{v}^{-} = \dot{x}_{\nu}\dot{x}_{n}\left(P_{\nu n} - R^{\sigma}_{n\nu s} + G^{s\sigma}_{n\nu} + C^{s\sigma}_{n\nu}\right) \tag{7.6.1}$$

$$P_{\nu n} = \frac{1}{\dot{x}_{\nu}\dot{x}_{n}}\left[(\dot{x}_{\nu}\partial_{\nu})(\dot{x}_{n}\partial_{n}),\ (\dot{x}^{n}\partial^{n})(\dot{x}^{\nu}\partial^{\nu})\right]_{v}^{-} \tag{7.6.2}$$

$$R^{\sigma}_{n\nu s} = \frac{1}{\dot{x}_{\nu}\dot{x}_{n}}\left[\dot{x}_{\nu}\partial_{\nu}(\dot{x}_{n}\overset{-}{\Gamma}{}^{s}_{\nu n}),\ \dot{x}^{n}\partial^{n}(\dot{x}^{\nu}\overset{+}{\Gamma}{}^{\sigma}_{n\nu})\right]_{v}^{-} \tag{7.6.3}$$

$$G^{s\sigma}_{n\nu} = \frac{1}{\dot{x}_{\nu}\dot{x}_{n}}\left[\dot{x}^{\nu}\overset{+}{\Gamma}{}^{\sigma}_{n\nu}\dot{x}_{n}\partial_{n},\ \dot{x}_{n}\overset{-}{\Gamma}{}^{s}_{\nu n}\dot{x}^{\nu}\partial^{\nu}\right]_{v}^{-} \tag{7.6.4}$$

$$C^{s\sigma}_{n\nu} = \frac{1}{\dot{x}_{\nu}\dot{x}_{n}}\left[\dot{x}_{\nu}\overset{-}{\Gamma}{}^{\alpha}_{n\nu}\dot{x}_{n}\overset{-}{\Gamma}{}^{s}_{\nu n},\ \dot{x}^{n}\overset{+}{\Gamma}{}^{a}_{\nu n}\dot{x}^{\nu}\overset{+}{\Gamma}{}^{\sigma}_{n\nu}\right]_{v}^{-} \tag{7.6.5}$$

$$\left[\hat{\partial}_{\lambda}\hat{\partial}_{\lambda}, \check{\partial}^{\lambda}\check{\partial}^{\lambda}\right]_{v}^{+} : (\hat{\partial}^{\lambda}, \dot{x}^{\nu}) \mapsto (\hat{\partial}_{\lambda}, \dot{x}_{a}\zeta^{\nu}),\ (\check{\partial}_{\lambda}, \dot{x}_{m}) \mapsto (\check{\partial}^{\lambda}, \dot{x}^{\alpha}\zeta_{m}) \tag{7.6.6}$$

The matrix $P_{\nu n}$ is defined as the *Growth Potential*, an entanglement capacity of the dark energies; $R^{\sigma}_{n\nu s}$ as *Transport Curvature*, a routing track of the communications; $G^{s\sigma}_{n\nu}$ as *Connection Torsion*, a stress energy of the transportations; and $C^{s\sigma}_{n\nu}$ as *Entangling Connector,* a connection of dark energy dynamics. Therefore, this framework represents a foundation of physical cosmology at the horizon commutations.

其中，矩阵 $P_{\nu n}$ 定义为生长势气，为暗能量的纠缠容量；$R^{\sigma}_{n\nu s}$ 表示传输曲率，为通信的路由轨迹；$G^{s\sigma}_{n\nu}$ 表示连接扭转矩，为传输的应力能；$C^{s\sigma}_{n\nu}$ 定义为纠缠交互子，为连接暗能量的动态学。因此，该框架表述的层界交互对易是物理宇宙学的基础。

Consider an object observed externally and given by the (7.4.4-5) equations that actions of the commutation are dominant towards the residual entanglement $\left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right]^-_v$. Following the similar commutation infrastructure of the above equations, the event operations contract directly to the manifold communications and the commutation relations of equation (7.6.1-6) are simplified to:

考虑一个物体由 (7.4.4-5) 方程给出的外部观察，交互对易的纠缠 $\left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right]^-_v$ 作用，在驻域中起主导作用。类似于上述等式中交互对易的基础设施，事件操作直接签约到流形通信，等式 (7.6.1-6) 的交互对易关系，可以被简化为：

$$\left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right]^-_v = \dot{x}_n\dot{x}_\nu\left(\frac{R}{2}g_{n\nu} - R^{\sigma}_{n\nu s} + G^{\sigma s}_{n\nu} + C^{s\sigma}_{n\nu}\right) \tag{7.6.7}$$

$$R_{\nu m} = \left[(\dot{x}_\nu\partial_\nu)(\dot{x}_m\partial_m), (\dot{x}^\nu\partial^\nu)(\dot{x}^m\partial^m)\right]^-_s = \frac{R}{2}g_{\nu m} \tag{7.6.8}$$

$$R^{\mu}_{n\nu\sigma} = -\left(\partial_\nu\overset{-}{\Gamma}{}^{\mu}_{a\sigma}\partial_a\overset{+}{\Gamma}{}^{\mu}_{\nu\sigma} + \overset{-}{\Gamma}{}^{\rho}_{a\sigma}\overset{+}{\Gamma}{}^{\mu}_{\nu\rho} - \overset{+}{\Gamma}{}^{\rho}_{\nu\sigma}\overset{-}{\Gamma}{}^{\mu}_{a\rho}\right) \equiv R^{\mu}_{n\nu\sigma}(\hat{\partial}^\lambda, \check{\partial}_\lambda) \tag{7.6.9}$$

$$G^{s\sigma}_{n\nu} = \overset{+}{\Gamma}{}^{s}_{n\nu}\partial^s - \overset{-}{\Gamma}{}^{\sigma}_{\nu n}\partial_\sigma \equiv G^{s\sigma}_{n\nu}(\hat{\partial}^\lambda, \check{\partial}_\lambda) \tag{7.6.10}$$

$$C^{s\sigma}_{n\nu} = \overset{-}{\Gamma}{}^{s}_{m\nu}\overset{+}{\Gamma}{}^{\sigma}_{\nu n} - \overset{+}{\Gamma}{}^{\sigma}_{\nu n}\overset{-}{\Gamma}{}^{s}_{m\nu} \equiv C^{s\sigma}_{n\nu}(\hat{\partial}^\lambda, \check{\partial}_\lambda) \tag{7.6.11}$$

$$\left[\hat{\partial}_\lambda\hat{\partial}_\lambda, \check{\partial}^\lambda\check{\partial}^\lambda\right]^+_v = \dot{x}_n\dot{x}_\nu\left(\tilde{R}^-_{n\nu} - \tilde{R}^{\sigma}_{n\nu s} + \tilde{G}^{s\sigma}_{n\nu} + \tilde{C}^{s\sigma}_{n\nu}\right) \tag{7.6.12}$$

$$\tilde{R}^-_{\nu m} = R^-_{\nu m}(\hat{\partial}_\lambda, \check{\partial}^\lambda),\ \tilde{R}^{\sigma}_{n\nu s} = R^{\sigma}_{n\nu s}(\hat{\partial}_\lambda, \check{\partial}^\lambda) \qquad : \hat{\partial}_\lambda = L^+_{\sigma\nu}\partial^\sigma \tag{7.6.13}$$

$$\tilde{G}^{s\sigma}_{\nu m} = G^{s\sigma}_{\nu m}(\hat{\partial}_\lambda, \check{\partial}^\lambda),\ \tilde{C}^{s\sigma}_{\nu m} = C^{s\sigma}_{\nu m}(\hat{\partial}_\lambda, \check{\partial}^\lambda) \qquad : \check{\partial}^\lambda = L^-_{\sigma\nu}\partial_\sigma \tag{7.6.14}$$

where $L^{\mp}_{\sigma\nu}$ is the *Lorentz* group (4.11.2-4). More precisely, the event presences of the Y^-Y^+ dynamics manifests infrastructural foundations and transportations of the potential, curvature, stress, torsion, and contorsion, which give rise to the interactional entanglements through the center of an object by following its geodesics of the underlying virtual and physical commutations. Generally, transportations between Y^-Y^+ manifolds are conserved dynamically.

其中，$L_{\sigma\nu}^{\mp}$ 是洛伦兹群 (4.11.2-4) 。更准确地说，阴阳 ($Y^{-}Y^{+}$) 动态学的事件体现在势气场、曲率、应力、扭转和扭曲的基础设施和传输，这些基础设施和传输通过物体中心的虚态和物态交互对易，沿着测地线 (geodesics) 产生相互纠缠作用；一般来说，阴阳 ($Y^{-}Y^{+}$) 流形之间的输运过程是具备动态守恒性。

7. 广义相对论 General Relativity

For a statically frozen or inanimate state $\left[\check{\partial}^{\lambda}\check{\partial}^{\lambda}, \hat{\partial}_{\lambda}\hat{\partial}_{\lambda}\right]_{v}^{-} \to \Lambda g_{\mu\nu}$, the two-dimensions of the world line can be aggregated in the expression $R^{\sigma}_{n\nu s} \mapsto R_{n\nu}$, $C^{s\sigma}_{n\nu} \mapsto C_{n\nu}$ and $G^{s\sigma}_{n\nu} \mapsto G_{n\nu}$. Therefore, the equation (7.6.7) formulates *General Relativity*:

对于静态冻结或无生命状态：$\left[\check{\partial}^{\lambda}\check{\partial}^{\lambda}, \hat{\partial}_{\lambda}\hat{\partial}_{\lambda}\right]_{v}^{-} \to \Lambda g_{\mu\nu}$，世界线的两个维度可以聚合成简化表达式 $R^{\sigma}_{n\nu s} \mapsto R_{n\nu}$、$C^{s\sigma}_{n\nu} \mapsto C_{n\nu}$和 $G^{s\sigma}_{n\nu} \mapsto G_{n\nu}$。因此，方程（7.6.7）显现为广义相对论：

$$G_{n\nu} = R_{n\nu} - \frac{1}{2}R g_{n\nu} = \frac{8\pi G}{c^4}T_{\mu\nu} \qquad : \left[\check{\partial}^{\lambda}\check{\partial}^{\lambda}, \hat{\partial}_{\lambda}\hat{\partial}_{\lambda}\right]_{v}^{-} = 0,\ C_{n\nu} = 0 \qquad (7.7.1)$$

$$or \quad R_{\mu\nu} + \Lambda g_{\mu\nu} = \tfrac{1}{2}R g_{\mu\nu} + G_{\mu\nu} \qquad : \left[\check{\partial}^{\lambda}\check{\partial}^{\lambda}, \hat{\partial}_{\lambda}\hat{\partial}_{\lambda}\right]_{v}^{-} = \Lambda g_{\mu\nu},\ C_{n\nu} = 0 \qquad (7.7.2)$$

known as the *Einstein* field equation, discovered in November 1915. It is important to understand that, based on the assumption, this model is not for a real universe but for a scientific imagination only, a statically frozen universe.

这就是1915年11月发现的爱因斯坦场方程。这里必须强调，基于这些假设，这个模型不是针对真实的宇宙，而是一种科学遐想模型：静态冻结宇宙。

The theory had been one of the most profound discoveries of the 20th-century physics to account for general commutation in the context of classical forces. As we emphasized before, it turns out to be impossible to find a general definition for a seemingly simple property such as a system's total mass (or energy). The main reason is that the gravitational field—like any physical field—must be ascribed a certain energy, but that it proves to be fundamentally impossible to localize that energy.

这个理论是20世纪物理学最深刻的发现之一，用来解释经典力场的普遍对易交换。正如我们先前阐述的一样，对于一个看似简单的性质，比如系统的总质量（或能量），

要找到一个通用的定义是不可能的。主要原因是引力场和任何物理场一样，都必须归属于某种能量，但事实证明，要将这种能量局域化是根本不可能的。

Apparently, for a century, the philosophical interpretation had remained a challenge or unsolved, until this *Universal Topology* was discovered since 2016, representing an integrity of philosophical and mathematical solutions to extend further beyond general relativity to include the obvious phenomenons of cosmological photon and graviton transportation, blackhole radiation, and dark energy modulation, shown by the details of the following sections.

显然，一个世纪以来，哲学解释一直是一个挑战或未解决的问题，直到2016年我们的宇宙拓扑学被发现，才代表了哲理学以数学解决方案的完整性，进一步扩展到不仅广义相对论，而且，还包括了宇宙光子和引子传输、黑洞辐射和暗能量调制等显而易见的现象，有以下各章节详细阐述。

8. 本体场方程 Ontological Field Equations

The asymmetric commutation is operated by one of the interpretable, residual, and interactive features exchanging the information carried by the scalar fields (7.3.1-2):

操作协称对易交换的特征是标量场（7.3.1-2）携带可释、局域和交互信息：

$$\left[\check{\partial}_\lambda \check{\partial}_\lambda, \hat{\partial}^\lambda \hat{\partial}^\lambda\right]_s^+ = -\left(\hat{\partial}^\lambda (\check{\partial}^\lambda - \check{\partial}_\lambda)\right\rangle_s^- \quad : \{\phi^-, \varphi^+\} \qquad (7.8.1)$$

$$\left[\check{\partial}^\lambda \check{\partial}^\lambda, \hat{\partial}_\lambda \hat{\partial}_\lambda\right]_s^- = -\left(\hat{\partial}_\lambda (\check{\partial}^\lambda - \check{\partial}_\lambda)\right\rangle_s^+ \quad : \{\phi^+, \varphi^-\} \qquad (7.8.2)$$

where the index *s* refers to the scalar potentials. The first equation is the physical animation and reproduction of asymmetric ontology, and the second equation is the virtual creation and annihilation of asymmetric ontology. As a general expectation, the asymmetric motion of ontology features that i) *Residual Entanglement* closely resembles the objects under a duality of the real world; and ii) *Transformational Dynamics* operates the processes under the event actions. As a notation, this chapter was introduced at September 9th of 2018.

其中，指数 *s* 标识的是标量势气场。第一个方程是协称本体的物理盛生和繁衍，第二个方程是协称本体场的虚拟创造和湮灭。一般来说，本体论的协称运动特征是：i）局域纠缠与现实世界二象性下的物态相似性；ii）在事件作用下实现转换性动态学的操作过程。作为注释，本章内容引入于2018年9月9日。

From definitions of the gamma γ^ν-*Matrices* (4.5.2), one can convert each of the right-side equations of the above asymmetric scalar entanglers explicitly under the second horizon at the constant speed:

根据伽马 γ^ν-矩阵的定义（4.5.2），我们可以在第二层界下以恒定速度显式地转换上述各个协称标量纠缠体方程的右侧：

$$\mathcal{O}_{\nu m}^{+\sigma} \equiv -\dot{x}^\sigma \zeta^0 \partial^\sigma \left(\dot{x}^\nu \zeta_2 \partial_\nu - \dot{x}_m \zeta_3 \partial_m\right\rangle_s^- \quad : \{\phi^-, \varphi^+\} \qquad (7.8.3)$$

$$\mathcal{O}_{\nu m}^{-\sigma} \equiv -\dot{x}_\sigma \zeta^1 \partial^\sigma \left(\dot{x}^\nu \zeta_2 \partial_\nu - \dot{x}_m \zeta_3 \partial_m\right\rangle_s^+ \quad : \{\phi^+, \varphi^-\} \qquad (7.8.4)$$

The $\mathcal{O}_{\nu m}^{\pm\sigma}$ is the Y^+ or Y^- ontological modulators. Illustrated by equations of (7.5.5, 7.8.3), the ontological dynamics can now be fabricated in the covariant form of asymmetric ontology:

其中，$\mathcal{O}_{\nu m}^{\pm\sigma}$ 是 Y^+ 或 Y^- 本体调制张量。犹如（7.5.5，7.8.3）的方程所示，本体动态学现在可以用协称本体的协变形式来建模：

$$\frac{R}{2}g_{\nu m} + G_{\nu m}^{\sigma s} = \mathcal{O}_{\nu m}^{+\sigma} \qquad : \zeta_\nu = \gamma_\nu + \chi_\nu \qquad (7.8.5)$$

$$\tilde{R}^{\nu m} + \tilde{G}_{\nu m}^{\sigma s} = \mathcal{O}_{\nu m}^{-\sigma} \qquad : \zeta^\nu = \gamma^\nu + \chi^\nu \qquad (7.8.6)$$

Named as *Ontological Field Equations*, the first equation at the Y^--supremacy is affiliated with the *physical Annihilation of Ontological processes*. The second equation at the Y^+-supremacy is the conservation law inherent in the *Virtual Creation of Ontological processes*. Apparently, the creation and annihilation processes are much more sophisticated because of the message transformations, relativistic commutations, and dynamic modulations.

定义为**本体场方程**，以Y^--至上的第一个方程与本体过程的物理湮灭有关。以Y^+-至上的第二个等式是本体过程的虚拟创造中所固有的守恒定律。显然，由于信息转换、对易交换和动态调制，创造与湮灭过程是复杂而又同工异曲之妙。

With the scalar potentials, the $Y^\pm$ events conjure up the entanglements of eternal fluxions as a perpetual streaming for residual motions traveling on curvatures of the world lines, which is the persistence of an object without deviation in its situation of movements at its state and energies. The term $\mathcal{O}_{\nu m}^{-\sigma}$ or $\mathcal{O}_{\nu m}^{+\sigma}$ implies the left- or right-hand helicity and modulations balanced to its opposite motion curvatures. Classically, the term "residual" is described by or defined as: an object is not subject to any net external forces and moves at conservation of energy fluxions on the world planes, relativistically. This means that an object continues its Y^-Y^+ interweaving at its current states superposable until some interactions or modulations causes its state or energy to change.

在标量势气场的作用下，$Y^\pm$ 事件使人联想到永恒流动的纠缠，它是在世界线的曲率上运动的驻域运动的永动流，是一个模块在其状态和能量运动的情况下没有偏差的持续

存在。$\mathcal{O}_{\nu m}^{-\sigma}$ 或 $\mathcal{O}_{\nu m}^{+\sigma}$ 表示左或右螺旋度和与其相反运动曲率平衡的调制。经典上，"局域"一词被描述或定义为：一个物体不受任何净外力的影响，在相对性的世界平面上以能量流动守恒的方式运动。这意味着一个模块在其当前状态下继续交织，直到某些相互作用或调制导致其状态或能量发生变化。

Considering the Infrastructural Matrices

考虑到基础结构矩阵的关系

$$\zeta = \gamma + \chi \qquad \gamma^0\gamma^\nu = \gamma^\nu \qquad \gamma^1\gamma^2 = i\gamma^3 \qquad \gamma^1\gamma^3 = i\gamma^2 \tag{7.8.7}$$

the property for the gamma matrices to generate a Clifford algebra is the continuity relation

伽马矩阵生成 Clifford 代数的性质是连续关系

$$\langle \gamma^\nu, \gamma^\mu \rangle = 2\eta^+ I_4 \tag{7.8.8}$$

One can convert the ζ-matrix explicitly into the asymmetric scalar entanglers. The (7.8.3-4) equations can be shown by the vector matrixes:

这样，就可以将ζ-矩阵显式地转化为协称标量纠缠，所以，方程 (7.8.3-4) 进一步用向量矩阵表示：

$$\mathcal{O}_{\nu\mu}^{+\sigma} = \mathcal{O}_d^+ - \kappa_o^+ (\partial^t \quad \mathbf{u}^+ \nabla) \begin{pmatrix} 0 & \mathbf{D}_a^+ \\ -\mathbf{D}_a^* & \frac{\mathbf{u}^+}{c^2} \times \mathbf{H}_a^+ \end{pmatrix} \tag{7.8.9}$$

$$\mathcal{O}_{\nu\mu}^{-\sigma} = \mathcal{O}_d^- - \kappa_o^- (\partial^t \quad \mathbf{u}^- \nabla) \begin{pmatrix} 0 & \mathbf{B}_a^- \\ -\mathbf{B}_a^* & \frac{\check{\mathbf{b}}}{c} \times \mathbf{E}_a^- \end{pmatrix} \tag{7.8.10}$$

where $\kappa_o^\pm$ is a pair of the constants. The $\mathbf{D}_a^*$, $\mathbf{D}_a^+$, $\mathbf{E}_a^-$, $\mathbf{B}_a^*$, $\mathbf{B}_a^-$ and $\mathbf{H}_a^+$ fields are not only the complex functions but also the intrinsic modulations in the form of a duality of asymmetry cohesively and and implicitly. It might appear similar to but functionally different from the electromagnetic fields in the form of a duality of symmetry. The vector components can be expressed as the area flow of energy density and current:

其中，$\kappa_o^{\pm}$ 是一对常量。$\mathbf{D}_a^*$, $\mathbf{D}_a^+$, $\mathbf{E}_a^-$, $\mathbf{B}_a^*$, $\mathbf{B}_a^-$ 和 $\mathbf{H}_a^+$ 场不仅是复函数，而且具有内在调制的协称形式，具有内聚性和隐含性。它们看起来与可能电磁场相似，但在功能上不同，表现为对称的二象性，能量流的密度和面积可以表示为：

$$\mathcal{O}_{\nu\mu}^{+\sigma} = \mathcal{O}_d^+ - \kappa_o^+ \begin{pmatrix} -(\mathbf{u}^+\nabla)\cdot\mathbf{D}_a^* \\ \frac{\partial}{\partial t}\mathbf{D}_a^+ + \frac{\mathbf{u}^+}{c}\nabla\left(\frac{\mathbf{u}^+}{c}\times\mathbf{H}_a^+\right) \end{pmatrix} \tag{7.8.11}$$

$$\mathcal{O}_{\nu\mu}^{-\sigma} = \mathcal{O}_d^- - \kappa_o^- \begin{pmatrix} -(\mathbf{u}^-\nabla)\cdot\mathbf{B}_a^* \\ \frac{\partial}{\partial t}\mathbf{B}_a^- + \frac{\mathbf{u}^-}{c}\nabla\times\mathbf{E}_a^- \end{pmatrix} \tag{7.8.12}$$

Apparently, the ontological gauge processes, $\left(\partial^\nu + ieA^\nu/\hbar\right)$ and $\left(\partial_\nu - ieA_\nu/\hbar\right)$ are primarily the superphase A^ν and A_ν operations as the resource supplier or modular of the off-diagonal matrices for the asymmetric dynamics. Meanwhile, it generates the light and gravitational waves $\Diamond^{\pm}$ from their diagonal elements. The Y^-Y^+ events conjure up the entanglements of eternal fluxions as another perpetual streaming for transportations on the world-line curvatures. In addition, the vector components in the above matrices are source of the area flow of energy density and current:

显然，本体规范过程 $\left(\partial^\nu + ieA^\nu/\hbar\right)$ 和 $\left(\partial_\nu - ieA_\nu/\hbar\right)$ 主要是作为协称动态学的非对角矩阵的资源提供者，也是模块的超象 A^ν 和 A_ν 操作。同时，从它们的对角线元素产生光和引力波 $\Diamond^{\pm}$。Y^-Y^+事件使人联想到永恒流动的纠缠，这是世界线曲率上另一个永恒的传输流。此外，上述矩阵中的矢量分量是能量密度和电流面积流的来源：

$$\nabla\cdot\mathbf{D}_a^* = 4\pi G\rho_a \qquad : \kappa_o^+ = 2/c^3 \tag{7.8.13}$$

$$4\pi G\mathbf{J}_a^+ = \frac{\partial}{\partial t}\mathbf{D}_a^+ - \nabla\times\mathbf{H}_a^+ \tag{7.8.14}$$

where the formula, $\nabla\cdot(\mathbf{u}\times\mathbf{H}) = \mathbf{H}\cdot(\nabla\times\mathbf{u}) - \mathbf{u}\cdot(\nabla\times\mathbf{H})$, is applied at the constant speed. The torque transportation between the complex manifolds of the Y^-Y^+ world planes redefines the rotational quantities of how commutations between the dual spaces are entangled under the conjugation framework in two referential frames traveling at a consistent velocity with respect to one another. These equations are the transport dynamics affiliated with the physical Reproduction and Animation of the ontological processes. At the constant speed $\mathbf{u}^{\pm} = \mp c$, the ontological dynamics implies the two-dimensional motion curvatures be operated at the second horizon giving rise to the third horizon and transporting the entangling forces $\tilde{\chi}^\nu \mapsto \chi^\nu$ at the four-dimensional spacetime manifold. Vice versa for the annihilation.

其中，应用了公式 $\nabla \cdot (\mathbf{u} \times \mathbf{H}) = \mathbf{H} \cdot (\nabla \times \mathbf{u}) - \mathbf{u} \cdot (\nabla \times \mathbf{H})$，且速度为常数。世界 Y^-Y^+ 平面复流形之间的绕矩传递重新定义了，在共轭框架下，两个以相同速度运动的参照系中，对偶空间之间的交换如何纠缠的旋转动量。这些方程是与本体过程的物理盛生和繁衍有关的输运动态学。在匀速 $\mathbf{u}^\pm = \mp c$ 下，本体动态学意味着二维运动曲率在第二层界的运行，产生第三层界，并在四维时空流形上输送纠缠力 $\tilde{\chi}^\nu \mapsto \chi^\nu$。反之亦然，如淹湮灭过程。

9. 宇宙本体方程 Conservation of Cosmic Ontology

At a free space or vacuum, the above equations derives the commutative formulae, named as *Equations of cosmic Ontology*:

在自由空间或真空中，上述方程导出了对易交换公式，称为**宇宙本体方程**组：

$$\frac{R}{2}\mathbf{g}^- + \mathbf{G} = \mathbf{O}^+ \qquad \because \mathbf{g}^- = g_{\nu m}, \quad \mathbf{G} = G^{\sigma s}_{\nu m}, \quad \mathbf{O}^+ = \mathcal{O}^{+\sigma}_{m\nu} \tag{7.9.1}$$

$$\tilde{\mathbf{R}}^+ + \tilde{\mathbf{G}} = \mathbf{O}^- \qquad \because \tilde{\mathbf{R}}^+ = \tilde{R}^{\nu m}, \quad \tilde{\mathbf{G}} = \tilde{G}^{\sigma s}_{\nu m}, \quad \mathbf{O}^- = \mathcal{O}^{-\sigma}_{m\nu} \tag{7.9.2}$$

As expected, the ontological *gamma*- and *chi*-fields are similar to or evolve into electromagnetic fields and gravitational fields. As the processes of the nature of being, the equations (7.8.3-4) uncoil explicitly the compacted covariant formulae. Generally, the above conservation of ontological dynamics describe the following principles:

正如所料，本体论的伽马场和恺场与电磁场和引力场相似，演化为电磁场和引力场。在自然生成的过程中，方程（7.8.3-4）明确地展开了紧凑的协变公式。一般来说，上述本体动态学守恒描述了以下原则：

1. *The ontological dynamics is conserved and carried out by the area densities for creations or annihilations, which serve as Law of Conservation of Cosmic Ontology.*

   本体动态学是由面积密度守恒来执行创造或湮灭，这是宇宙本体论的守恒定律。

2. *In the world planes, the curvature R and stress tensor $G^{\sigma s}_{\nu m}$ is dynamically sustained during the asymmetric modulations over a spiral gesture of movements.*

   在世界平面上，螺旋运动的协称调制过程，维持着动态曲率 R 和应力张量 $G^{\sigma s}_{\nu m}$。

3. *Without the Riemannian curvature $\mathfrak{R}^{\pm}=0$, it indicates that the system (such as a galactic center) is spiraling on the world lines and entangling through a modulation of the $\mathbf{O}^{\pm}$ matrix between the $Y^{-}Y^{+}$ manifolds at the second horizons.*

   由于，没有黎曼曲率 $\mathfrak{R}^{\pm}=0$，系统（如银河系中心）则在世界线上只有螺旋运动，并通过第二层界 $Y^{-}Y^{+}$ 流形之间的 $\mathbf{O}^{\pm}$ 矩阵进行缠绕和调制。

4. *Operated and maintained by the superphase potentials, the conservation of energy fluxions supplies the resources, modulates the transform, and transports potential messages or forces, alternatively.*

   在宫位势气场运作和维持下，能量流动守恒交替地提供了资源、调制转换、传递潜在信息或力场。

5. *The commutation fields of the superphase potentials transform and entangle between manifolds as the resource propagation of the asymmetric dynamics.*

   在双流行之间，宫位势气变换和纠缠的对易交换场，形成本体动态学的激力资源。

6. *The torque fields of the superphase potentials transport and entangle between manifolds as the force generators of the ontological processes of motion dynamics.*

   作为运动动态学本体过程的力发生器，形成了流形间宫位势气输运和纠缠的力矩场。

Apparently, it represents that the resources are composited of, supplied by or conducted with the residual activators and motion modulators primarily in the virtual world. It implies that, in the physical world, the directly observable parameters are the coverture R, stress tensor $\mathbf{G}$ and wave propagation $\Diamond^{\pm}$. Aligning with the dual world-lines of the universal topology, the commutation of energy fluxions animates the resources, modulates messages of the potential transform and transports while performing actions or reactions.

显然，主要来自于虚拟世界中的局域激活器和运动调节器，组成、提供或导引所有的资源配置。这意味着，在物态世界中，直接可观测的参数是曲率 R、应力张量 $\mathbf{G}$ 和波传播 $\Diamond^{\pm}$。与宇宙拓扑学的二象世界线相一致，在执行和交互运作中，能量流动的对易交换使资源充满活力，达到协调势气场信息的传输和转换。

10. 本体加速场 Ontological Accelerations

Connected to the Y^- or Y^+ entanglement, the dynamic accelerations $\mathbf{g}_s^\pm$ of ontology are given by equations of (7.8.1-2) with the scalar potential as the following expression, respectively:

与 Y^- 或 Y^+ 纠缠相关，本体学动态加速度 $\mathbf{g}_s^\pm$ 由 (7.8.1-2) 方程给出，标量势气场分别表为下式：

$$\mathbf{g}_s^- / \kappa_g^- = \left[\check{\partial}^\lambda \check{\partial}^\lambda, \hat{\partial}_\lambda \hat{\partial}_\lambda\right]_s^- - \mathbf{O}^+ \qquad : \kappa_g^- = \frac{\hbar c}{2E^-} \qquad (7.10.1)$$

$$\mathbf{g}_s^+ / \kappa_g^+ = \left[\check{\partial}_\lambda \check{\partial}_\lambda, \hat{\partial}^\lambda \hat{\partial}^\lambda\right]_s^+ - \mathbf{O}^- \qquad : \kappa_g^+ = \frac{\hbar c}{2E^+} \qquad (7.10.2)$$

where $\kappa_g = 1/(\hbar c)$ is a constant. For a system, its core center may absorb the objects when $\mathbf{g}_s^+ > 0$ and emits objects at $\mathbf{g}_s^+ < 0$. To maintain the stability at $\tilde{\mathbf{g}}_s = \mathbf{g}_s^+ + \mathbf{g}_s^-$, the accelerations of a system might be conserved: $\mathbf{g}_s^+ + \mathbf{g}_s^- = 0$ and usually has to balance both a black core absorbing energies and a white core exert energies. Because the resources are primarily supplied by the virtual world where operates the residual activators and motion modulators, any life activities appear to be favorable towards the Y^+ deceleration $\mathbf{g}_s^+ < 0$ for mass emission (creation) and balanced by the Y^- (annihilation) accelerations $\mathbf{g}_s^- > 0$. Vice versa for the annihilation. In other words, known as *Hubble's Law*, the energy conservation implies that the light emission at the second horizon might always be observable as the redshift or dispersive waves under a third horizon, which, however, is not *Doppler* shift. The conservation of virtual and physical dynamics balances the expansion or reduction of the universe at the scale of both virtual and physical spaces. It is a property of the entire universe as a whole rather than a phenomenon that applies just to one part of the universe observable physically.

其中，$\kappa_g = 1/(\hbar c)$ 是个常数。对于一个系统来说，它的核心中心可以在 $\mathbf{g}_s^+ > 0$ 时吸收物体，在 $\mathbf{g}_s^+ < 0$ 发射物体。为了保持在 $\tilde{\mathbf{g}}_s = \mathbf{g}_s^+ + \mathbf{g}_s^-$ 的稳定性，系统的加速度可以是守

恒的：$\mathbf{g}_s^+ + \mathbf{g}_s^- = 0$，通常需要平衡黑体吸收能量和白体辐射能量。由于资源主要由虚态世界提供，在这个虚态世界里，运行着局域激活剂和运动调节器，所以任何生命活动似乎都有利于创生质量的 Y^+ 减速 $\mathbf{g}_s^+ < 0$，并由 Y^- 化归加速度 $\mathbf{g}_s^- > 0$ 平衡，反之亦然。换言之，如哈勃定律，能量守恒意味着在第二层界的光发射总是可以被观察到作为第三层界上的红移或色散波，但这不是多普勒频移。虚态和物态动态学的守恒在虚拟空间和物理空间的尺度上平衡了宇宙的膨胀或缩小，它是整个宇宙作为一个整体的性质，而不是只适用于宇宙的一部分物理上可以观察到的某种现象。

Since the ontological dynamics at the second horizon is on world planes with two-dimensional coordinates, the *Ricci* scalar is given by

由于第二层的本体动态学是在二维坐标系的世界平面上，因此，Ricci 可以标量为

$$R = -2\left[\frac{1}{c^2}\frac{\ddot{a}}{a} + \frac{1}{c^2}\left(\frac{\dot{a}}{a}\right)^2 + \frac{k}{a^2}\right] \tag{7.10.3}$$

The energy momentum tensor $T_{\mu\nu}$ is similarly constraint as the *Ricci* scalar. It can only contain two independent functions of *t* and its components are

能量的动量张量 $T_{\mu\nu}$ 与 Ricci 标量具有类似约束，它只能包含时间 t 的两个独立函数，它们的组成部分是

$$T_{00} = \rho_0(t), \qquad T_{0t} = 0 \qquad T_{\mu\nu} = p_0(t)g_{\mu\nu} \tag{7.10.4}$$

$$G_{tt} = \frac{8\pi G}{c^2}\rho_0, \qquad G_{rr} = \frac{8\pi G}{c^2}p_0 \tag{7.10.5}$$

The trace of the diagonal elements (7.8.13-14) of the equation (7.9.1) can be extracted and shown by the following:

方程 (7.9.1) 包含对角线元素 (7.8.13-14) 的迹线，也可提取并按以下公式表示：

$$\frac{\ddot{a}}{a} + \left(\frac{\dot{a}}{a}\right)^2 + \frac{kc^2}{a^2} = \mathcal{O}_d^+ + \frac{4\pi G}{c^2}(\rho c^2 - p) \tag{7.10.6}$$

$$\rho = 2\rho_0 + \rho_a \qquad \rho_a = \frac{1}{4\pi G}\nabla\cdot\mathbf{D}_a^* \tag{7.10.7}$$

$$p = 2p_0 + p_a \qquad p_a = c^2 Tr(\mathbf{J}_a^+) \tag{7.10.8}$$

$$4\pi G\mathbf{J}_a^+ = \frac{\partial}{\partial t}\mathbf{D}_a^+ - \nabla\times\mathbf{H}_a^+ \tag{7.10.9}$$

Named as *World-line of Horizon Field Equations*, they serve as conservation between the second and third horizons. One can further convert them to the following form:

定义为**世界线层场方程**，它们在第二和第三层界之间起守恒作用，也可以进一步将其转换为以下形式：

$$\tilde{H}_2^2 + \tilde{H}_2\tilde{H}_3 + \frac{kc^2}{a^2} = \mathcal{O}_d^+ + \frac{4\pi G}{c^2}(\rho c^2 - p) \tag{7.10.10}$$

$$\tilde{H}_2 = \frac{\dot{a}}{a}, \qquad \tilde{H}_3 = \frac{\ddot{a}}{\dot{a}} \qquad k = 0 \tag{7.10.11}$$

where $\tilde{H}_2$ or $\tilde{H}_3$ is named the second or third horizon function of world-line manifolds, respectively. Because, the *density* and the *horizon fields* are a collection of the *complex states* asymmetrically, it implies an eternal yinyang-steady state universe in form of a spiral galaxy that dynamically orchestrates the mass, density, photon, graviton, thermodynamics, weak and strong forces, packed all together.

其中，分别命名 $\tilde{H}_2$ 或 $\tilde{H}_3$ 为世界线流形的第二或第三地层场函数。由于，密度场和层界场是一个协称的复杂态集合，它隐含着一个永恒宇宙的阴阳稳态，它以一个螺旋星系的形式，将质量、密度、光子、引子、热熵、弱力和强力等因素，动态地聚集和协调在一起。

At near the third horizon, the curvature *k* might be zero. The horizon field equation becomes a quadratic equation, resolvable for the second horizon function $\tilde{H}_2$. Solving the quadratic equation $\tilde{H}_2^2 + \tilde{H}_3\tilde{H}_2 - K_2 = 0$, one has the roots for the second and third horizon function $\tilde{H}_2$ for the parameters as he following:

在第三层界附近，曲率 *k* 可以为零。第二个层场的 $\tilde{H}_2$ 函数方程，有二次方程式的解，$\tilde{H}_2^2 + \tilde{H}_3\tilde{H}_2 - K_2 = 0$，可以得到第二和第三层场函数的根，其参数由如下所示：

$$\tilde{H}_2 = \frac{1}{2}\left(-\tilde{H}_3 \pm \sqrt{\tilde{H}_3^2 + 4K_2}\right) \tag{17.27}$$

$$K_2 \equiv K_2(\omega, T) = \mathcal{O}_d^+ + \frac{4\pi G}{c^2}(\rho c^2 - p) \tag{17.28}$$

Accordingly, because K_2 can be zero, or H_2 can be a complex function at the second horizon, the scalar metric $a(t)$ is a complex function, representing a harmonic duality of the Y^-Y^+ interwoven dynamics for life streams entangling on both of *World Planes*. Therefore, the *Horizon Field Equations* (7.10.6) or (7.10.10) is totally contradict to the hypothesis that the universe described by the equation (7.7.1-2) implies abrupt appearance of expanding spacetime metric.

相应地，由于 K_2 是第二层界线上的复函数，也可以为零。标量度规 $a(t)$ 是一个复函数，表现了两个世界平面上的生命纠缠流的 Y^-Y^+ 交互和协对偶性的动态学。所以，世界线层场方程（7.10.6）或 (7.10.10)，与方程（7.7.1-2）所描述突然出现时空宇宙尺度的假设是完全相悖。

11. 宇宙动态方程 Equations of Cosmic Dynamics

At the third horizon or higher, the energy potentials embodied at the mass enclave conserve the asymmetric commutations as one of the transient astronomical events and features propagation of the curvature dynamics carried by the *Vector* fields, shown by a pair of the commutative equations (7.3.1-2):

在第三层或更高层界，质量廓体所包含的能量势气场，保持了作为一个瞬态天文事件的协称对易交换，并且具有由矢量场携带的曲率动态学传播的特征，如一组对易交换方程（7.3.1-2）所示：

$$\left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right]_v^+ = -\left(\hat{\partial}^\lambda(\check{\partial}^\lambda - \check{\partial}_\lambda)\right\rangle_v^- \qquad : \{\phi^-, V^+\} \qquad (7.11.1)$$

$$\left[\check{\partial}^\lambda\check{\partial}^\lambda, \hat{\partial}_\lambda\hat{\partial}_\lambda\right]_v^- = -\left(\hat{\partial}_\lambda(\check{\partial}^\lambda - \check{\partial}_\lambda)\right\rangle_v^+ \qquad : \{\phi^+, V^-\} \qquad (7.11.2)$$

where the index v refers to the vector potentials. The first equation is the physical dynamics of cosmology, and the second equation is the virtual motion dynamics.

其中，索标 v 指的是矢量场。第一个方程是宇宙学的物理动态学，第二个方程是虚拟动态学。

Aligning with the continuously arising horizons at the spacetime manifolds, the events determine the derivative operations through the vector potentials giving rise to the matrix fields for further dynamic evolutions at the Y^+-supremacy. From definitions of the *Lorentz-matrices* (6.3.1-6), one can convert the right-side equation (7.11.1) of the asymmetric vector entanglers explicitly into the following formulae, similar to the derivation of equation (7.8.9):

与不断上升的层界一致，在时空流形中，事件决定了，通过向量场导数运算，从而产生矩阵场，并在 Y^+ 优势下，实现进一步的动态演化。根据洛伦兹矩阵 (6.3.1-6) 的定义，可以将协称矢量纠缠器的右侧方程 (7.11.1) 明确地转换为以下公式，类似于方程 (7.8.9) 的推导：

$$\Lambda^{+\sigma}_{\nu\mu} = \Lambda^{+}_{d} - \kappa^{+}_{\Lambda} \begin{pmatrix} -(\mathbf{u}^{+}\nabla) \cdot \mathbf{D}^{*}_{\nu} \\ \frac{\partial}{\partial t}\mathbf{D}^{+}_{\nu} + \frac{\mathbf{u}^{+}}{c}\nabla\left(\frac{\mathbf{u}^{+}}{c} \times \mathbf{H}^{+}_{\nu}\right) \end{pmatrix} \tag{7.11.3}$$

where κ^{+}_{Λ} is a constant, the lower index ν indicates the vector potentials, the $\mathbf{D}^{+}_{\nu}$ and $\mathbf{H}^{+}_{\nu}$ fields are the intrinsic modulations in the form of a duality of asymmetry cohesively. The $\Lambda^{+\sigma}_{\nu\mu}$ is the Y^{+} cosmological modulator that extends the classic cosmological constant to the matrix. Illustrated by equations of (7.6.7), the motion dynamics can now be fabricated in the covariant form of asymmetric equation, named as *Equations of Cosmic Dynamics*:

其中，κ^{+}_{Λ} 是常数， 索标 ν 表示矢量势气场，$\mathbf{D}^{+}_{\nu}$ 和 $\mathbf{H}^{+}_{\nu}$ 场是内在调制，以协称性的二象性形式凝聚在一起。$\Lambda^{+\sigma}_{\nu\mu}$ 是将经典宇宙学常数扩展到矩阵 Y^{+} 宇宙调制张量。如 (7.6.7) 中的方程所示，现在可以用如下协变形式的协称方程来构造模型，定义为**宇宙动态方程组**：

$$\mathscr{R}^{-\sigma}_{\nu ms} + \Lambda^{+\sigma}_{\nu m} = \frac{R}{2} g_{\nu m} + G^{s\sigma}_{\nu m} + C^{s\sigma}_{\nu m} \tag{7.11.4}$$

$$\mathfrak{R}^{-} + \boldsymbol{\Lambda}^{+} = \frac{R}{2}\mathbf{g}^{-} + \mathbf{G} + \mathbf{C}^{-} \qquad : \mathfrak{R}^{-} \equiv \mathscr{R}^{-\sigma}_{\nu m\mu}, \ \ \boldsymbol{\Lambda}^{+} \equiv \Lambda^{+\sigma}_{\nu m} \tag{7.11.5}$$

The *Riemannian* curvature $\mathfrak{R}^{-}$ associates the metric $\mathbf{g}^{-}$, relativistic stress $\mathbf{G}$ and contorsion $\mathbf{C}$ tensors to each world-line or spacetime points of the Y^{-} manifolds that measures the extent to the metric tensors from its locally isometric to its opponent manifold or, in fact, conjugate to each other's metric.

黎曼曲率 $\mathfrak{R}^{-}$ 将度规 $\mathbf{g}^{-}$、相对性应力 $\mathbf{G}$ 和扭曲 $\mathbf{C}$ 张量与 Y^{-} 流形的每个世界线或时空点相关联，这些世界线或时空点的测量度规张量，其局部同构到对偶流形的同构程度，实际上，反应的是相互共轭的度规。

Apparently, the dark-energy dynamics is the sophisticated processes with the message transformations, relativistic commutations, and dynamic modulations that operate the physical motion curvature. This equation servers as *Law of Conservation of Y^{-} Cosmological Motion Dynamics*, introduced at 17:16 September 7th 2017 that the Y^{-} fields of a world-line curvature are constituted of and modulated by asymmetric fluxions, given rise from the Y^+ vector potential fields not only to operate motion geometry, but also to carry out messages for reproductions and animations. It implies that the virtual world supplies energy resources in the forms of area fluxions, and that the cosmological modulator $\mathbf{\Lambda}^+$ has the intrinsic messaging secrets of the dark energy operations, further outlined in the following statement:

显然，暗能动态学是一个精妙的过程，有着控制物理运动曲率的信息转换、相对性对易和动态调制。该方程作为宇宙运动动态学的 Y^- 守恒定律，于2017年9月7日17:16引入，世界线曲率的 Y^- 气场由协称流动构成并受其调制，其产生于 Y^+ 矢量势场，不仅用于操作运行几何，也要为繁衍和盛生提供信息。这意味着虚态世界以区域面流动的形式提供能量资源，宇宙调制张量 $\mathbf{\Lambda}^+$ 具有暗能量运行的内在信息秘密，由下面的陈述中进一步概述：

1. *During the Y^-Y^+ entanglements between the world planes, the asymmetric potentials dynamically operate spacetime curvatures $\mathfrak{R}^-$ and supply the area energy at a horizon rising from symmetric fluxions of vector potentials.*

   在世界平面间的 Y^-Y^+ 纠缠过程中，协称势气场动态地操纵着时空曲率 $\mathfrak{R}^-$，并从矢量势气的对称流动中，向层场提供面积能量流。

2. *The Y^- motion curvature $\mathfrak{R}^-$, stress $\mathbf{G}$ and contorsion $\mathbf{C}$ dynamically balance the transformation and transportation through the asymmetric fluxions entangling between the dual manifolds.*

   Y^- 运动曲率 $\mathfrak{R}^-$、应力 $\mathbf{G}$ 和扭曲 $\mathbf{C}$，通过双流形之间缠绕性协称流动，动态地平衡着变换和输运过程。

3. *The Y^- asymmetric motions are internally adjustable and dynamically operated by the potentials of the Y^+ modulator $\mathbf{\Lambda}^+$ through the energy fluxions. In other words, a cosmic system is governed by the modulator $\mathbf{\Lambda}^+$ symmetrically and the commutation asymmetrically.*

Y^- 协称运动是，运用 Y^+ 调制 $\mathbf{\Lambda}^+$ 的势气场，通过能量流动进行内部调节和动态操作。换句话说，宇宙系统是由对称调制张量 $\mathbf{\Lambda}^+$ 和交换协称和对易来实施控制。

4. *The $\mathbf{\Lambda}^+$ modulator evolves, generates and gives rise to the further horizons which integrate with the dynamic forces, motion collations, or symmetric entanglements.*

   与动态力、运动校准或对称纠缠相结合，调制张量 $\mathbf{\Lambda}^+$ 演化、产生和形成更高层界。

5. *Remarkably as its resources of symmetric counterpart, it associates the diagonal components that embed and carryout the horizon radiations, wave transportations, as well as the force generators spontaneously.*

   引人注目的是，作为共轭对称的资源，调制张量 $\mathbf{\Lambda}^+$ 的对角线分量相关联的是形成层场内在辐射、波传输和自然力的激发子。

6. *The trace of moderation tensor $Tr(\mathbf{\Lambda}_d^+)$ might be observable externally and might be dependent only to the frequency and temperature $\Lambda_d(\omega, T)$ in a free space. As expected, the smaller the Λ_d, the greater stability the universe.*

   调制张量的踪迹 $Tr(\mathbf{\Lambda}_d^+)$ 是可以从外部观察到的，并且可能只与自由空间中的频率和温度 $\Lambda_d(\omega, T)$ 有关，正如预期的那样，Λ_d 越小，宇宙的稳定性就越大

7. *Besides, the asymmetric strength $\mathbf{D}_v^+$, twisting $\mathbf{H}_v^+$ fields and modulator $\mathbf{\Lambda}^+$ components are a part of the propagational entanglements throughout the system intrinsically, resourcefully, modularly, and gracefully.*

   此外，协称强度 $\mathbf{D}_v^+$ 场、扭曲 $\mathbf{H}_v^+$ 场和 调制 $\mathbf{\Lambda}^+$ 场中的各个分量是整个系统在传播纠缠的组成部分，优美地体现了其内在性、资源性、模块性，等。

Usually, the tensor $\mathbf{\Lambda}^+$ institutes dynamic modulations internally while its asymmetric area fluxions and the reactors are observable indirectly and externally to the system.

在通常情况下，张量 $\mathbf{\Lambda}^+$ 在内部产生动态调制，而其协称的面积流动以及链锁反应，在系统外部是可间接观察的。

12. 虚拟动态方程 Equations of Virtual Dynamics

In a parallel fashion, by following the same approach, we can fabricate compactly the contravariant formula at the Y^--modulation and its conservation inherent in the *Equations of Virtual Dynamics*.

运用同理推演，我们可以简洁地构造出在 Y^--调制下的逆变换公式，它的守恒性是隐含于**虚拟动力方程**中：

$$\tilde{\mathscr{R}}^{+\sigma}_{\nu m\mu} + \Lambda^{-\sigma}_{\nu m} = \tilde{R}_{\nu m} + \tilde{G}^{\sigma s}_{\nu m} + \tilde{C}^{\sigma s}_{\nu m\mu} \ : \Lambda^{-\sigma}_{\nu m} = \Lambda^-_d - \kappa^-_\Lambda \begin{pmatrix} -(\mathbf{u}^-\nabla)\cdot\mathbf{B}^*_v \\ \frac{\partial}{\partial t}\mathbf{B}^-_v + \frac{1}{c}\mathbf{u}^-\nabla\times\mathbf{E}^-_v \end{pmatrix} \quad (7.11.1)$$

$$\tilde{\mathfrak{R}}^+ + \mathbf{\Lambda}^- = \tilde{\mathbf{R}} + \tilde{\mathbf{G}} + \tilde{\mathbf{C}} \qquad : \mathbf{\Lambda}^- \equiv \Lambda^{-\sigma}_{\nu m}, \quad (7.11.2)$$

where the $\mathbf{B}^-_v$ and $\mathbf{E}^-_v$ fields are the intrinsic modulations in the form of a duality of asymmetry cohesively. The matrices are associated with the *Lorenz*-group at the third or higher horizon. The above equation also serves as *Law of Conservation of Y^+ Cosmological Field Dynamics* that associates curvature, stress and contorsion with commutators of area fluxions:

其中，$\mathbf{B}^-_v$ 和 $\mathbf{E}^-_v$ 场是内在调制矩阵，以协称性和二象性形式凝聚在一起。这些矩阵与第三层或更高层的洛伦兹群相关联。上述方程也是**宇宙动态方程场**的Y^+守恒定律，它将曲率、应力和扭曲与面流的对易子联系了起来

1. *At a horizon rising from commutations of vector potentials, this equation describes the outcomes between the internal entanglements and motion behaviors observable externally to the system though the Y^- modulation $\mathbf{\Lambda}^-$ of the activator.*

   在矢量势气场对易中形成的层界上，这个方程描述了，通过 Y^- 调制 $\mathbf{\Lambda}^-$ 矩阵激活的系统，可以在外部观察到其内在纠缠和运行之间的结果。

2. *The motion annihilation of metric $\mathbf{g}^{+}$, stress $\tilde{\mathbf{G}}$ and connector tensors $\tilde{\mathbf{C}}$ conserve the Riemannian curvature $\mathfrak{R}^{+}$ travelling over the world lines or spacetime and entangling through the actor $\mathbf{\Lambda}^{-}$ matrix between the $Y^{-}Y^{+}$ manifolds at the third or higher horizons.*

   当在世界线或时空上移动时，通过第三层或更高层的 $Y^{-}Y^{+}$ 流形之间的缠绕调制 $\mathbf{\Lambda}^{-}$ 矩阵，保持了度规 $\mathbf{g}^{+}$、应力 $\tilde{\mathbf{G}}$ 和连接 $\tilde{\mathbf{C}}$ 张量的运动和湮没，以及黎曼曲率 $\mathfrak{R}^{+}$ 之间的守恒。

3. *The Y^{+} motion curvature $\mathfrak{R}^{+}$, stress $\tilde{\mathbf{G}}$ and contorsion $\tilde{\mathbf{C}}$ dynamically balancing the transportation through the asymmetric fluxions, which may radiate the lightwaves, photons and gravitons associated with its symmetric counterpart.*

   通过协称流动的输运，Y^{+} 运动曲率 $\mathfrak{R}^{+}$、应力 $\tilde{\mathbf{G}}$ 和扭曲 $\tilde{\mathbf{C}}$ 矩阵的动态平衡流动，可以辐射与其对称态相关的辐射波、光子和引子。

4. *The fluxion is entangling the vector potentials to propagate the resource modulator $\mathbf{\Lambda}^{-}$ of the asymmetric strength $\mathbf{B}_{v}^{-}$ and twisting $\mathbf{E}_{v}^{-}$ fields, conservatively and consistently.*

   该流动将矢量势气场纠缠在一起，以连贯性守恒方式，传播协称强度 $\mathbf{B}_{v}^{-}$ 和扭曲 $\mathbf{E}_{v}^{-}$ 场的资源调制张量 $\mathbf{\Lambda}^{-}$。

5. *The internal continuity of energy fluxion might be hidden and convertible to and interruptible with its Y^{+} opponent fields for the dynamic entanglements reciprocally throughout and within the system.*

   对于动态共轭纠缠，能量流动的内部连续性可以是隐性的和可转换的，并且能够与它的 Y^{+} 对偶场相互交接，从而，贯穿于内部和整个系统。

6. *The tensor Λ_{d}^{-} is asymmetric fluxion for the force generator, classically known as the spontaneous symmetry breaking. As expected, the symmetry can be evolved gracefully for activities such that the entire system retains symmetry.*

   张量 Λ_{d}^{-} 以协称流动激发力，在经典中称为自发对称破缺。正如预期的那样，对称性可以优雅地演化，在运行中使整个系统保持对称性。

7. *The asymmetric strength $\mathbf{E}_v^-$ and twisting $\mathbf{B}_v^-$ fields of the off-diagonal $\mathbf{\Lambda}^-$ components are a part of the propagational entanglements throughout the system intrinsically, resourcefully, modularly, and gracefully.*
   非对角 $\mathbf{\Lambda}^-$ 分量的协称强度 $\mathbf{E}_v^-$ 和扭曲 $\mathbf{B}_v^-$ 张量场是整个系统中传播纠缠的一部分，优美地体现了其内在性、资源性、模块性，等。

At the Y^--supremacy, the asymmetric forces or acceleration is logically affiliated with the *virtual dynamics* while its physical motion curvature is driven by the Y^+-supremacy of the virtual world. For the accelerations at non-zero $\mathbf{g}_v^\pm \neq 0$, one has the following expression, similar to (7.10.1-2) of the ontological accelerations:

在 Y^- 主导下，协称力或加速度在逻辑上与虚拟动态学相关联，而其物理运动曲率则由虚拟世界的 Y^+ 主导来驱动。对于非零 $\mathbf{g}_v^\pm \neq 0$ 处的加速度，有如下表达式，类似于本体加速度方程（7.10.1-2）：

$$\mathbf{g}_v^- / \kappa_g^- = \left[\check{\partial}^\lambda \check{\partial}^\lambda, \hat{\partial}_\lambda \hat{\partial}_\lambda\right]_v^- - \mathbf{\Lambda}^+ \qquad : \kappa_g^- = \frac{\hbar c}{2E^-} \tag{7.11.3}$$

$$\mathbf{g}_v^+ / \kappa_g^+ = \left[\check{\partial}_\lambda \check{\partial}_\lambda, \hat{\partial}^\lambda \hat{\partial}^\lambda\right]_v^+ - \mathbf{\Lambda}^- \qquad : \kappa_g^+ = \frac{\hbar c}{2E^+} \tag{7.11.4}$$

where $\mathbf{g}_v^-$ or $\mathbf{g}_v^+$ is a normalized acceleration of cosmology. As a duality, a galaxy center may have a mixture of a black core absorbing objects and a white core radiating the photons and gravitons. For a blackhole, its core center may absorb the objects in order to maintain its activities for its motion stability of annihilation. Reciprocal to a blackhole, a galaxy center may have more radiations instead of absorbing objects, which results in a brightness of its core to stabilize its highly functioning activators and operating modulators - the nature of the mysterious dark energy.

其中，$\mathbf{g}_v^-$ 或 $\mathbf{g}_v^+$ 是宇宙学的归一化加速度。作为一组二象性，一个星系中心可以有一个黑洞核心吸收物体和一个白洞核心辐射光子和引子的混合体。对于黑洞来说，它核心中心可以吸收物体以维持其活动，用以保持其湮灭运动的稳定性。与黑洞相反，星系中心可以有更多的辐射而不仅仅是吸收物体，这会导致其核心亮度来稳定其高功效的激发和操作调节子 - 这就是暗能量的自然神秘性。

13. 时空层界方程 Spacetime Horizon Equations

Since the cosmic dynamics at the third horizon is on spacetime manifold with four-dimensional coordinates, the FLRW metric in *Cartesian* coordinates has the *Riemann* curvature tensor at the components of the *Ricci* tensor:

由于第三层界的宇宙动态学是在四维坐标的时空流形上，笛卡尔坐标系下的 FLRW 度规，在里奇张量的分量处，具有黎曼曲率张量：

$$R_{00} = -\frac{3}{c^2}\frac{\ddot{a}}{a}g_{00}, \qquad R_{0\nu} = 0 \qquad R_{\mu\nu} = \left[\frac{1}{c^2}\frac{\ddot{a}}{a} + \frac{2}{c^2}\left(\frac{\dot{a}}{a}\right)^2 + \frac{2k}{a^2}\right]g_{\mu\nu} \qquad (7.13.1)$$

where as expected the isotropy and homogeneity of our metric leads to the vanishing of the vector $R_{0\nu} = 0$ and forces the spacial part to be proportional to the metric $R_{\mu\nu} \propto g_{\mu\nu}$. The *Ricci* scalar is given by

如预期的那样，度规的各向同性和均匀性导致向量 $R_{0\nu} = 0$ 消失，并迫使空间部分与度规 $R_{\mu\nu} \propto g_{\mu\nu}$ 成比例，有里奇标量的表达形式：

$$R = -6\left[\frac{1}{c^2}\frac{\ddot{a}}{a} + \frac{1}{c^2}\left(\frac{\dot{a}}{a}\right)^2 + \frac{k}{a^2}\right] \qquad (7.13.2)$$

The energy momentum tensor $T_{\mu\nu}$ is similarly constraint as the *Ricci* scalar. It can only contain two independent functions of time *t* and its components are

能动量张量 $T_{\mu\nu}$ 与里奇标量具有类似的约束，只能包含时间 t 的两个独立函数，它们的组成部分是：

$$T_{00} = \rho_0(t), \qquad T_{0t} = 0 \qquad T_{\mu\nu} = p_0(t)g_{\mu\nu} \qquad (7.13.3)$$

$$G_{tt} = \frac{8\pi G}{c^2}\rho_0 \qquad G_{rr} = \frac{8\pi G}{c^2}p_0 \qquad (7.13.4)$$

From the equation (7.3.1), it can be extracted and shown by the following:

从式（7.3.1）中，可以提取并表示如下：

$$3H_2^2 + 3\frac{kc^2}{a^2} = c^2\Lambda_{tt}^+ + 4\pi G\rho \qquad : \rho = 2\rho_0 + \rho_{tt} \tag{7.13.5}$$

$$3H_2H_3 = c^2\Lambda_{rr}^+ - \frac{4\pi G}{c^2}(\rho c^2 + 3p) \qquad : p = 2p_0 + \frac{1}{3}p_{rr} \tag{7.13.6}$$

$$H_2 = \frac{\dot{a}}{a}, \qquad H_3 = \frac{\ddot{a}}{\dot{a}}, \tag{7.13.7}$$

$$p_v = p_{tt} + p_{rr} = c^2 Tr(\mathbf{J}_v^+) \tag{7.13.8}$$

where H_2 or H_3 is named the second or third horizon function of spacetime manifolds, respectively. Representing the arisen ratios, these horizon functions extend the classical *Hubble* parameter H_2 into a hierarchy of the natural topology of universe. Named as *Spacetime Horizon Equations*, the equations (7.13.5-6) serve as conservation of the third horizon and extends the *Friedmann* equations in to a duality of virtual-physical reality, shown as below:

其中，分别命名 H_2 或 H_3 为时空流形的第二或第三地层界函数。这些层界函数将经典的哈勃参数 H_2 扩展到宇宙自然拓扑的层次结构中，代表了层场的上升率。命名方程组 (7.13.5-6) 为**时空层界方程**，它们在第三层界守恒，并将弗里德曼方程扩展到事实上的虚实二象性中，如下所示：

$$\nabla \cdot \mathbf{D}_v^* = 4\pi G\rho_v \tag{7.13.9}$$

$$\frac{\partial}{\partial t}\mathbf{D}_v^+ - \nabla \times \mathbf{H}_v^+ = 4\pi G\mathbf{J}_v^+ \tag{7.13.10}$$

Because, the Spacetime *Horizon Equations* are a collection of the *complex states*, it implies an eternal yinyang-steady state universe that, remarkably, the dark energy operates the resources and modulates the motion dynamics in form of the physical mass, virtual-energy density, photon, graviton, thermodynamics, weak and strong forces, packed all together. Therefore, the equations (7.13.5-6) are contradict to the hypothesis that the universe described by the equation (7.8.2-7.8.3) might imply abrupt appearance of expanding spacetime metric.

因为，时空层界方程是一组复杂状态的集合，它意味着一个永恒的阴阳稳态宇宙，特别是暗能量操控着资源并调节着运动动态方式，形成物理质量、虚能量密度、光子、引

子、热熵、弱力和强力的形态，因此，方程（7.13.5-6）与方程（7.8.2-3）所描述的遐想宇宙（意味着突然出现时空度规的假设）相矛盾。

14. 协称波传播 Asymmetrical Wave Propagation

A coherent wave is the synthesis of the state packet or specific oscillations, often described as a duality of the $Y^{-}Y^{+}$ dynamics most closely resembling the oscillatory behavior of wave propagations bidirectionally, representing a state in a system for which the ground-state wave-packet is displaced from the origin of the system. These states, for example, can be expressed as eigenvectors of the ladder operators to form an overcomplete family, or related to the solutions by a pair of the reciprocal oscillators with an amplitude equivalent to the classical progressive displacement. In the horizon infrastructure, two of remarkable characteristics of wave packet propagations are non-dispersive at the second horizon and dispersive at the third or higher horizons.

相干波是状态包或特定振荡的合成，通常被描述为二象性阴阳 ($Y^{-}Y^{+}$) 动态学，极类似于波的双向传播的振荡行为，代表系统中基态波包从系统置于原点移位的状态。例如，这些状态可以表示为阶梯算子的特征向量，形成一个超完备族，或者通过一对振幅相当于经典对耦振子递进迭代的相关解。在层界基础设施中，波包传播的两个显著特征是在第二层界中无色散波和第三层或更高层界为色散波。

Non-dispersive packet is the wave-packet preserved from spreading that travels in one direction, multiplied by a plane wave traveling in the opposite direction, reciprocally. Especially suitable for photons and gravitons at the second horizon, it has the appealing features that the waves, undergo only local variations in the stabilizing envelopes, do not spread out as they propagate in free space, and travel with the speed of light in straight lines. This virtual behavior is under a $Y^{-}Y^{+}$ interweavement on the world planes that can be conveniently expressed natively by polar coordinates $\{r, \vartheta\}$, where r depicts the physical manifold as a whole aligned with its virtual twin and positioned at the natural superphase ϑ. On the two-dimensional world planes, this polar system simplifies the following formulae observable externally to the system：

非色散包是指在一个方向传播的波包，乘以反向传播的平面波。特别适用于第二层界的光子和引子，它有一个诱人的特点，即，波只在稳定的包络线中发生局部变化，在自由空间传播时不会扩散开来，而是以光速直线传播。这种虚拟行为是在世界平面上的阴阳 (Y^-Y^+) 交织下进行的，可以方便地用极坐标 $\{r, \vartheta\}$ 表示，其中，r 将物理流形描述为一个整体，与其虚拟孪生体对齐，并置位于自然宫位 ϑ 中。在二维世界平面上，这个极坐标系简化了系统外部可观察到的下列公式：

$$\nabla^2 = \frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial}{\partial r}\right) + \frac{1}{r^2}\frac{\partial^2}{\partial \vartheta^2} \qquad : ict = rcos(\vartheta) \qquad (7.14.1)$$

$$\nabla^2\psi_n - \frac{1}{c^2}\frac{\partial^2}{\partial t^2} = 4\frac{E_n^- E_n^+}{(\hbar c)^2}N_n^c \eta_n \psi_n \qquad : \psi_n \in \{\varphi_n^-, \phi_n^+\} \qquad (7.14.2)$$

$$-i\hbar\frac{\partial}{\partial t}\psi_n = -i\frac{(\hbar c)^2}{2E_n^-}\nabla^2\psi_n + V(r, \vartheta)\psi_n \qquad (7.14.3)$$

where the η_n is the coupling efficiency. Given by the section 10 of Chapter 5, the N_n^c-$N_n^\pm$ is for the particles at nonzero charges and N_n^c=$N^o = N - N_n^\pm$ for neutrinos at neutral charge. Under superphase modulation of the first equation, the second equation is the enhanced *Klein–Gordon* equation and the third equation is the two-dimensional *Schrödinger* equation. Because of the Y^-Y^+ duality, the wave function ψ_n contains two types of the packets $\psi_n \in \{\varphi_n^-, \phi_n^+\}$, where the scalar potential packet is the Y^-Y^+ -wave propagating and interweaving simultaneously and reciprocally. As a result, under the second horizon, a solution to the *Horizon Field Equations* (7.10.6) and the above *Non-dispersive Packet Equations* is at a world plane as the virtual medium, characterizable simply by the two-dimensions of a polar coordinate system with one r for physical space and the other ϑ for virtual space. The carrier wave propagates at the phase speed, the modulation envelope propagates at the group speed that governs the propagation of information.

其中，η_n 是耦合效率。由第五章第十节给出，N_n^c-$N_n^\pm$ 代表荷性粒子，N_n^c=$N^o = N - N_n^\pm$ 代表中性中微子。在第一个方程是宫位调制算符，第二个方程是改进后的克莱因-戈尔登方程，第三个方程是二维薛定谔方程。由于 Y^-Y^+ 对偶性，波函数 ψ_n 包含两种类型的波包 $\psi_n \in \{\varphi_n^-, \phi_n^+\}$，其中标量势气包是同时相互传播和交织的 Y^-Y^+ 波。因此，在第

二层界中，世界线层场方程（7.10.6）和上述非色散包方程的解是在一个世界平面上呈现为虚拟介质，可以简单地用一个 r 表示物理空间和另一个 ϑ 表示虚拟空间的二维极坐标系来表征，载波以相位速度传播，调制包络以控制信息传播的群速度传播。

For the fields of dark energy in a free space, the right-side of the equation (7.14.2) might be considered as the resources of the dark energy. Multiplied by $\delta(r)$, it becomes a boundary condition of the emission source. Furthermore, the state of any pair of the virtual energy E_n^- or E_n^+ is an imaginary function with the wave-frequencies $E_n^{\pm}(\omega_n)$ of photon, graviton, neutrino, etc., illustrated by the following examples:

对于自由空间中的暗能量场，方程（7.14.2）的右边可以被认为是暗能量的来源。乘以 $\delta(r)$，它就成为发射源的边界条件。而且，任何一对虚能 E_n^- 或 E_n^+ 的状态都是一个镜像函数，具有波频率为 $E_n^{\pm}(\omega_n)$ 的光子、引子、中微子等，下面举例说明

1. *Mass acquisition*
   摄取质量

$$E_m^{\mp} = \pm\, imc^2\,,\, \hbar\omega \rightleftharpoons mc^2,\, \eta_m = 66.6\,\%: \qquad (7.14.4)$$

2. *Photon radiation of blackhole/whitehole*
   黑洞(白洞)的光子辐射

$$E_c^{\pm} = \mp\frac{i}{2}\hbar\omega_c,\, \eta_c = 2/\pi = 63.7\,\% \qquad (7.14.5)$$

3. *Graviton radiation of blackhole/whitehole*
   黑洞(白洞)的引子辐射

$$E_g^{\pm} = \mp\frac{i}{2}E_p,\, E_p = \sqrt{\hbar c_g^5/G},\, \eta_g = 100\,\% \qquad :(7.14.6)$$

4. *Planck Electron-photon radiations*
   普朗克光-电子辐射

$$E_e^{\pm} = \mp\frac{i}{2}\hbar\omega_e,\, \eta_e = \pi^{-3} = 3.2\,\% \qquad (7.14.7)$$

5. *Electron capture in polar molecules*

极性分子中的电子俘获

$$E_{pm}^{\pm} = \frac{\mp i\hbar^2 c}{2\sqrt{2\mu}} \left[cos\frac{\pi\nu}{2} + cos(\frac{\omega}{2} + \frac{\pi\nu}{4}) sin\frac{\pi\nu}{2} \right]^{1/2\nu} \tag{7.14.8}$$

In the last equation, the weakly bound states and electron energy is an example for the point dipole model of the polar molecule, classically known as scaling anomaly to the inverse square interaction or self-adjointness. Relevant to a relational $\{r, \vartheta\}$ model, such as $\psi(r, \vartheta) = R(r)\Theta(\vartheta)$ or $\psi(r, \vartheta) = e^{ikrcos(\vartheta)}\phi(r)$, the exact solutions to the (7.14.1-3) equations can be comprehensive in order to decompose the scalar waves into bidirectional, forward and backward, traveling plane wave-packets.

在最后一个方程中，弱束缚态和电子能量是极性分子点偶极模型的一个例子，经典地称自伴性标度，具有反平方相互作用的异常性。与关系 $\{r, \vartheta\}$ 模型相关，如 $\psi(r, \vartheta) = R(r)$ $\Theta(\vartheta)$ 或 $\psi(r, \vartheta) = e^{ikrcos(\vartheta)}\phi(r)$，方程组（7.14.1-3）的精确解，需要将标量波分解成双向波：向前和向后的二个行波包。

Approximated as blackbody ejections, the thermal state characterizes the radiation either spontaneously emitted by many ordinary objects or naturally operated by dark energies. In cosmology, a perfectly insulated enclosure is in thermal equilibrium internally, contains blackbody radiation, emits radiations at the second horizon, and has negligible effects upon the equilibrium at the spacetime horizon. In the equations of (7.14.1-3), three virtual states are the important ingredients: frequencies ω_n, temperature T, and chemical potential μ_n, each of which has a scope of its domain significance. For instance, at a second horizon of world planes, it features the well-known *Fermi–Dirac* statistics (5.13.1) with $E_n^c = \epsilon_n - \mu_n$, introduced in 1926 by *Enrico Fermi* and *Paul Dirac*, independently, as the following:

热态近似于黑体喷发，其特征是由许多普通模块自激发的辐射，或是由暗能量自然操作而产生的辐射。在宇宙学中，一个完全外壳绝缘的内部处于热平衡状态包含着黑体辐射，在第二个层界激发辐射时，对时空层界平衡的影响是微乎其微。在方程组（7.14.1-3）的重要组成部分是三个虚态量：频率 ω_n、温度 T 和化学势 μ_n，每一个都有其层域范畴的重要性。例如，在世界平面的第二个层界线上，它以著名的费米-狄拉

克统计 (5.13.1) 并具有 $E_n^c = \epsilon_n - \mu_n$ 的能量为特色，由恩里科·费米和保罗·狄拉克于1926年各自独立引入，如下所示：

$$N_n^c = h_n^c N = \frac{1}{e^{iE_n^c/k_BT} + 1} N \qquad : c \in \{-,0,+\} \qquad (7.14.9)$$

Because, in the second horizon, a superposing collection of indistinguishable objects may occupy a set of available discrete energy states at thermodynamic equilibrium, a distribution of particles over energy states in systems consists of many identical objects that obey the *Pauli* exclusion principle, introduced in 1925.

因为，在第二个层界中，热力学平衡时，一组不可分辨模块的叠加集合，可能占据一组可用的离散能态，因此，系统中粒子在能量态上的分布，由许多相同的模块组成，这些模块遵守1925年提出的泡利不相容原理。

Dispersive packet is the wave-packet travelling in the third or higher horizon or a spacetime cluster as the physically three-dimensional medium. The propagation of waves in a dispersive medium is under the Y^- supremacy of a spacetime manifold with the bidirectional representation in connection with the boundary conditions as well.

色散包是指作为物理三维介质在第三层或更高的层界或时空簇中传播的波包。波在色散介质中的传播受时空流形的 Y^- 主导支配，并与边界条件相关联。

$$\nabla^2 \psi - \frac{1}{c^2}\frac{\partial^2}{\partial t^2}\psi = 4\frac{E_n^- E_n^+}{(\hbar c)^2} N_n^c \eta_n \psi \qquad : \nabla^2 = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2} \qquad (7.14.10)$$

$$-i\hbar\frac{\partial}{\partial t}\psi = \hat{H}\psi, \ \hat{H} \equiv -i\frac{(\hbar c)^2}{2E_n^-}\nabla^2 + V(\mathbf{r}, t) \qquad (7.14.11)$$

$$\nabla^2 = \frac{1}{r^2}\frac{\partial}{\partial r}\left(r^2\frac{\partial}{\partial r}\right) + \frac{1}{r^2\sin\theta}\frac{\partial}{\partial\theta}\left(\sin\theta\frac{\partial}{\partial\theta}\right) + \frac{1}{r^2\sin^2\theta}\frac{\partial^2}{\partial\varphi^2}, \qquad (7.14.12)$$

For thermodynamics, the average energy in a bulk mode can be expressed by the partition function of energies at a third horizon of spacetime manifolds:

从热力学体模上看，平均能量可以用时空流形在第三层界能量的分配函数来表示，如下：

$$\tilde{E}^{\pm} = \pm\, iE_n^{\pm}\left(\frac{1}{2} + \frac{1}{e^{\pm iE_n^{\pm}/k_BT} - 1}\right) \tag{7.14.13}$$

The last term of this equation represents the well-known *Bose–Einstein* statistics (5.13.2) with the energy $E_n^{\pm} = \epsilon_n - \mu_n$, introduced by *Satyendra Nath Bose* in 1924. The aggregation in the same state is a bulk characteristic and accounts for the cohesive streaming fluxions of, for example, laser light and the frictionless creeping of superfluid helium. At the physical horizons, a solution to the *Cosmic Field Equation* (7.11.4) or *Dispersive Packet Equation* (7.14.10-11) is at a spacetime manifold as the physical medium, characterizable by the tetrad-dimensions with *Cartesian* or spherical coordinate system.

这个方程的最后一项代表了著名的玻色-爱因斯坦统计（5.13.2），并具有能量 $E_n^{\pm} = \epsilon_n - \mu_n$，由萨蒂恩德拉·纳特·博斯于1924年提出。同一状态下的聚集是一个整体特征和内聚流动，例如，它解释了激光等内聚流动和超流氦的无摩擦蠕动。在物理层界，宇宙场方程（7.11.4）或色散包方程（7.14.10-11）的解，是以时空流形为物理介质，以笛卡尔坐标系或球坐标系为四维特征。

Travelling through a physical spacetime or a galaxy, light from its original path in non-dispersive packet becomes dispersive until it exists the physical horizon and continues on its deflection waves non-dispersively. Under this principle, since the dispersive packets behave like gravitational fields and interfere with spacetime manifold physically, the deflection wavelengths of intergalactic eclipse can reveal some characteristics of the spacetime galaxy such as its size, massive type, motion activity, or distance. In “physical cosmology”, however, this is interpreted as the motion of undisturbed objects in a background curved geometry or alternatively as the response of objects to a force in a flat geometry, known as gravitational lensing. Under this classic interpretation, the observer has limited itself towards the decoherence features of the universe. For example, the angle of deflection light in a simple form of either relativistic *Newtonian* or *Schwarzschild* radius $\theta = 2r_s/r$ of equation (5.5.4).

在物理时空或星系中，光从其原始路径会从非色散变成色散包的形式传播，直到它离开物理层界后，以非色散方式继续其偏转后的波。在这一原理下，由于色散包的行为

类似于引力场，并在物理上干扰时空流形，因此，星系间食的偏转波长可以揭示时空星系的一些特征，如它的大小、质量类型、运行活动或距离。然而，在“物理宇宙学”中，这被解释为背景弯曲几何中未受干扰的物体的运动，或者另一种解释为物体对平面几何中力的影响，称为引力透镜效应。在这个经典的解释下，观测者将自己局限于宇宙的退相干特性，例如，偏折光的角度是方程（5.5.4）的相对性牛顿半径或史瓦西尔半径 $\theta = 2r_s/r$ 的简单形式。

Cosmic waves, including all wavelength of lightwaves, can be either electromagnetic radiation or dark energy emission, or both. Without sufficient empirical or philosophical verifications, it becomes an inconceivable hypothesis that electromagnetic radiation be a remnant from an early stage of the universe when the universe began.

宇宙波，包括所有波长的光波，既可以是电磁辐射，也可以是暗能量发射，或者两者兼而有之。如果没有足够的经验或哲理学验证，假设电磁辐射是宇宙起源时，宇宙早期阶段的残余物，这就变成了极其不可思议的臆想。

Mathematically, both of the dispersive and non-dispersive wave-packets have been researched extensively for the three-dimensional spherical coordinates in physical space. It can be as easy to evaluate asymptotically or numerically as those to be converted to the polar wave equations in virtual world planes. Besides, while a luminosity distance might be applicable within a spacetime only, it can be utilized to estimate the radius of a remote galaxy as well.

在数学上，三维空间球坐标系下的色散波包和非色散波包都得到了广泛的研究。它可以很容易地进行渐近或数值计算，就像那些被转换成虚拟世界平面上的极坐标波方程一样容易。此外，虽然光度距离可能只适用于一个时空范畴内，但它也许可以用来估计一个遥远星系的半径。

15. 自然宇宙学精要 Natural Cosmology In a Nutshell

Powered by Horizon Topology philosophically, this manuscript prevails over both Einstein's field equation (7.1.1) and Friedmann equations (7.1.3-4) with *Natural Cosmology* of *Ontological Field Equation* (7.8.5-6) and *Horizon Field Equations* (7.10.6, 7.10.10). The second horizon function H_2 is reevaluated for the world-line metric (2.5.2) to extend the classical Hubble parameter (7.13.7). These solutions integrate the natural complex states together, demonstrating a duality of virtual and physical coexistence, the entropy of thermodynamics, radiation of photons, emission of gravitons, particle interactions. In addition, the “general relativity” is substituted by the Cosmic Field Equation (7.11.1) with the inconceivable cosmological matrix.

运用哲理性层界拓扑学，本手稿以自然宇宙学的本体场方程 (7.8.5-6) 和层场方程 (7.10.6，7.10.10)，全面超越了爱因斯坦的场方程 (7.1.1) 和弗里德曼方程 (7.1.3-4)。对世界线度规（2.5.2）的第二层界函数 (7.13.7)进行了重新评估，用以扩展和提升了经典哈勃参数 H_2。这些解决方案将自然复杂状态整合在一起，展示了虚态和物态共存的二象性、热力熵、光子辐射、引子发射、粒子互易，等相互作用。此外，“广义相对论”被具有不可思议的宇宙学矩阵方程（7.11.1）所取代。

For the second horizon, the figure below highlights the formulae of the cosmological field theory of ontological evolutions, which is mathematically epitomized on the two-dimensional world planes. At the second horizon, intergalactic commutations of the photon and graviton emissions are predominant in the polar fields without singularity, where the light traveling at non-dispersive is hardly relevant to the motion dynamics of its physical object at the third horizon. In fact, the redshift implies the dark energy was and has been continuously operating the physical dynamics at the ontological regime, a process of which is always accompanied by radiations of lightwaves and interweave of gravitations.

对于第二层界，下图汇总了本体演化的宇宙学场理论和公式，它在数学上集中体现在二维世界平面上；在第二层界，光子和引子辐射的星系间的交换是在没有奇点的极坐标场的主导下运行的，在这种情况下，光的非色散传播与其在第三层界的物态运行动态学几乎没有关系。事实上，红移意味着暗能量曾经是并一直是在以本体形式运行着物态运行，这个过程总是伴随着光波的辐射和万有引力的交织。

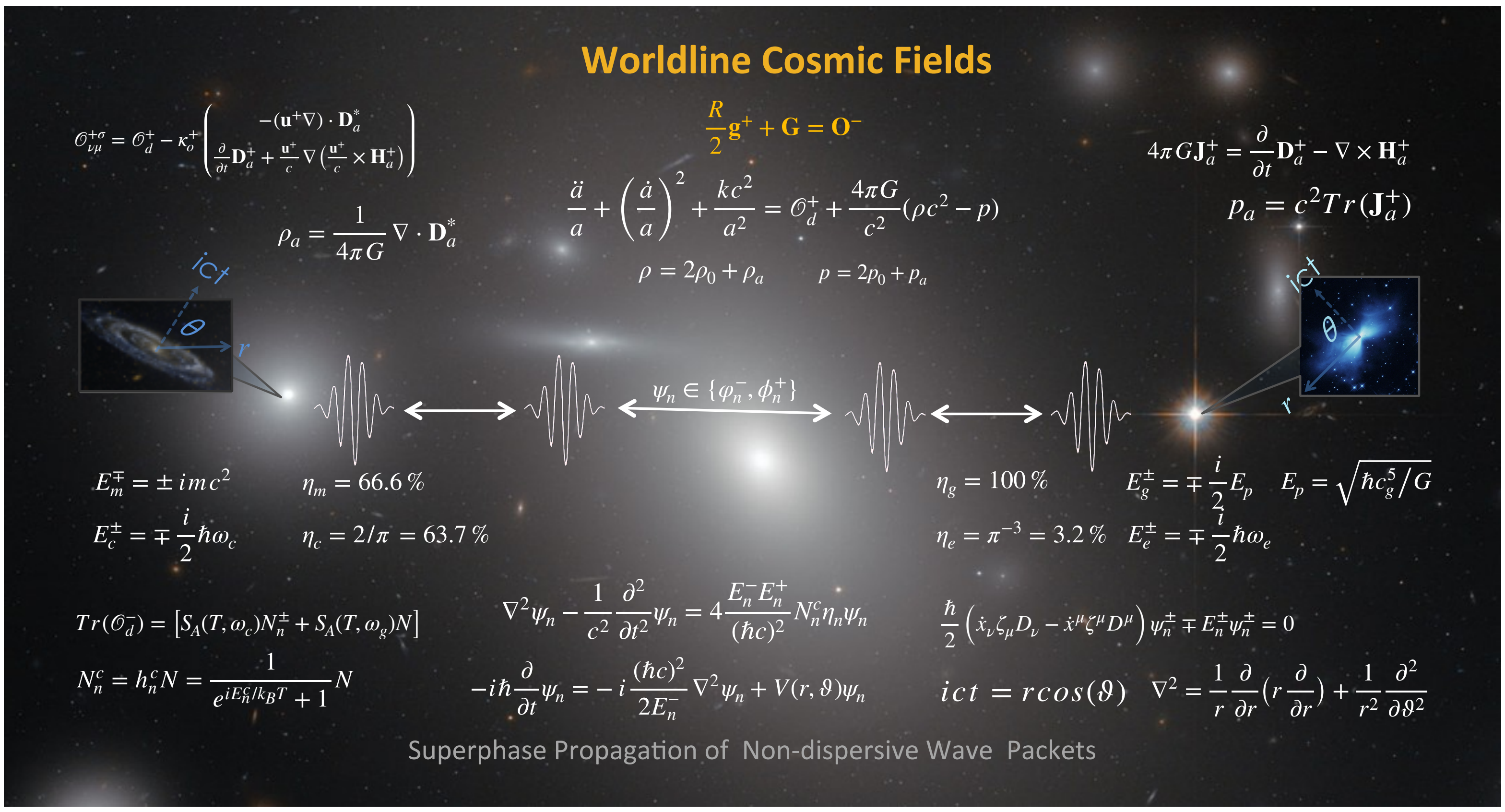


Figure 7.15.1: Intergalactic Virtual Commutations at Second Horizon of World Planes

图 *7.15.1:* 在第二层界的世界平面上，星系间的虚拟对易

At the third horizon, the world planes are further evolved into *spacetime* manifolds at four-dimensions, where the physical fields inaugurate the full mass enclave, acquire freedom of the extra rotations, and are transited to gravitational forces with a central-singularity. As another collection, the figure below highlights the formulae of the cosmological field theory of asymmetric dynamics, which is mathematically sketched on the tetrad-dimensions of spacetime manifolds. Because Y^-Y^+ entanglement is a part of mass enclave processes, the superphase fluxions exert a pair of the gravitational fields in a spacetime manifold, appearing as if there were from nothing with abrupt appearance of expanding spacetime metric. This was the course of how the “physical cosmology” has been misled to the flawed hypothesis that universe were expanding from the primordial "*Big Bang*". Since the dispersive lightwave packet is the known characteristics of physical medium in spacetime horizons, the redshift occurs at the conversion between the second and third horizon, which might appear as or equivalent to “expanding”. As expected, the time-lapse conversion to the physical horizons is equivalent to “expanding” or simply dispersive that is the known characteristics of the virtual world imposing or exposing on the physical world.

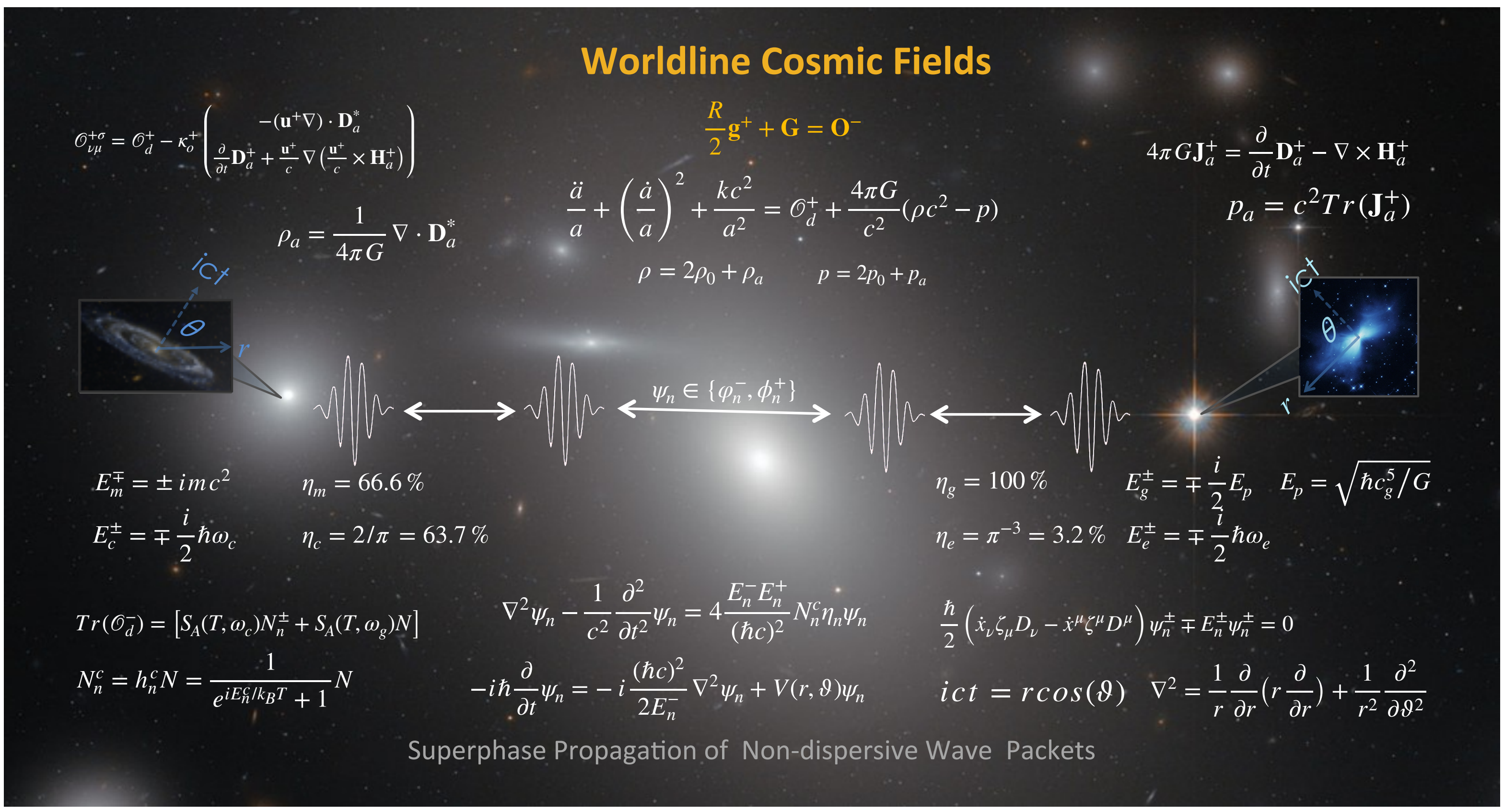


Figure 7.15.2: Heliosphere Physical Interactions at Third Horizon of Spacetime Manifolds

图 *7.15.2:* 在第三层界的时空流形上，太阳系层中物理的相互作用

在第三层界，世界平面进一步演化为四维时空流形，在那里物理场开源了完整的质量飞地，获得了额外旋转的自由，并转化为具有中心奇点的引力。作为另一个集合，以数学方式绘制了上图，汇总了协称动态学的宇宙场理论和公式，该理论是显现在时空流形的四维坐标上。由于，阴阳 ($Y^{-}Y^{+}$) 纠缠是质量包体形成过程的一部分，看起来似乎从无到有，宫位流在时空流形中施加了一对引力场，突然出现和扩展了时空度规。这就是为什么“物理宇宙学”被误导到错误假设，即，宇宙是从原始的“大爆炸”开始膨胀

的。由于色散光波包是物理介质在时空层界的已知特性，红移发生在第二层界与第三层界的转换处，由此表象为相当于“膨胀”效应。正如所料，时间推移效应转换到物理层界，相当于“扩展”成简单的扩散，这就是虚态世界施加并暴露在物理世界上的已知特征。

Our universe has a perfect environment, neither inflate nor deflation, pertaining to and suitable for a duality of the two-sidedness lying at the heart of all events or instances as they are interrelate, opposite or contrary to one another, each dissolving into the other in alternating streams that operates a life of creation, generation, or actions complementarily, reciprocally and interdependently. The nature consistently emerges as or dynamically entangles with a set of the $Y^{-}Y^{+}$ fields between matter interruptions that communicates and projects their interoperable states to its surrounding environment, alternatively arisen by or acting on its opponent through the reciprocal interactions.

我们的宇宙有一个完美的环境，既不膨胀也不收缩，其二象性从属于并适合于处于所有事件或事例的核心，因为它们相互关联，相互对立或相辅相反，每一个都在交替的溪流中溶入另一个对耦，互补地、互易地、相辅相成地运行着生命的创造、生成和行动。自然界总是以一组阴阳（$Y^{-}Y^{+}$）场的形式出现或动态地纠缠在物态相互作用之间，这些缠扰将它们的互操作状态传递并投射到周围环境中，或者通过相互作用而产生或作用于对偶。

In conclusion, the universe is naturally eternal and dynamically yinyang-steady. The entire universe is orchestrated as a whole rather than a phenomenon that applies just to one part of the universe or from the physical observation only, which, in the current model of “physical cosmology”, is at the "collapsed" states of the interweaving dynamics. Therefore, our astronomers shall bid farewell to the “*Big Bang*” theory.

综上所述，宇宙是自然而永恒的动态阴阳稳定体系，整个宇宙是精心安排的一个整体，而不是仅仅表象于宇宙的某一部分，也不局限于可观察的物理现象，然而，当前

的“物理宇宙学”模型，只停留于交互动态下可以被经验感知的“塌缩”状态。因此，我们的天文学家必将告别“大爆炸”理论。

本体进化论 Ontological Evolution

Chapter 8 第 8 篇

Under *Universal Topology* $W^{\mp}=P\pm iV$, a duality of the potential entanglements lies at the heart of all event operations as the natural foundation giving rise to and orchestrating relativistic transformations for photons and spiral transportations for gravitons. In addition, the superphase modulation conducts laws of evolutions and horizon of conservations, and maintains energy bonds, appearing as field entanglements of coupling weak and strong forces compliant to quantum chromodynamics and *Standard Model* of particle physics. It extends the unified physics stunning at exceptional remarks of the ontological specifics.

在宇宙拓扑 $W^{\mp}=P\pm iV$ 下，势气纠缠的二象性是所有事件操作的潜在核心，作为自然的基础设施，产生和协调着相对性变换的光子和宫位性传输的引子。此外，宫位调制遵循演化法则、层界守恒规律，维持能量键，表现为弱和强耦合纠缠力场，与量子色动力学和粒子物理标准模型吻合。它惊人地将统一物理学绝妙地扩展到了本体论卓越而又引人注目的细节内含。

Consistently landing on classical and extending to modern physics, this manuscript uncovers a series of the groundbreaking philosophy and mathematics accessible and tested by the countless artifacts of modern physics.

本手稿始终以古典物理学为落地基础，一直扩展延伸到现代物理学，揭示了一系列突破性的哲学和数学，这些哲理学原理已经被无数现代物理学的工程实践所接受和检验。

1. 层界拓扑 Horizon Topology

When an event gives rise to the states crossing each of the horizon points, an evolutionary process takes place. One of such actions is the field loops $(\partial^{\nu} A^{\mu} - \partial_{\mu} A_{\nu})_{jk}$ that incept a superphase process into the physical Y^- world from the virtual Y^+ regime where a virtual instance is imperative and known as a process of *Creations* or *Annihilations*. Because it is a world event incepted on the two dimensional planes $\{\mathbf{r} \mp i\mathbf{k}\}$ residually, the potential fields of massless instances can transform, transport and emerge the mass objects symmetrically into the physical world that extends the extra two-dimensional freedom. Within the second horizon, this virtual evolution is *implicit* until it embodies as an energy enclave of the acquired mass, and associates with strong nuclear and gravitational energy in the next horizon.

当一个事件产生跨越每个层界点的状态时，就会发生一个进化过程。其中，一种演化过程是场循环 $(\partial^{\nu} A^{\mu} - \partial_{\mu} A_{\nu})_{jk}$，它将一个宫位过程从虚态的 阳 ($Y^+$) 状态领域到物态的 阴 ($Y^-$) 世界，在这种状态下，虚态事例是必要性事件，主导著名的**创造**或**湮灭**过程。由于它是一个起源于二维平面$\{\mathbf{r} \mp i\mathbf{k}\}$上的驻域性世界事件，无质量事例的势气场可以对称地转化、传输和呈现质量物体于物态世界中，同时，物理世界也扩展了额外的二维自由度。在第二个层界内，这种虚态的演化是隐含的，直到它体现为获得物质的能量飞地，并与下一个层界中的强核能和引力能联系在一起。

As a duality of nature, its counterpart is another process named the Y^- *Explicit* reaction $(\dot{x}_{\nu} D_{\nu})_j \wedge (\dot{x}^{\mu} D^{\mu})_k$. It requires a physical process of *Reproduction* and *Animation*. Associated with the inception of a Y^+ spontaneous evolution, the actions of the Y^- *Explicit* reproduction are normally sequenced and entangled as a chain of reactions to produce and couple the weak electromagnetic and strong gravitational forces symmetrically in massive dynamics between the second and third horizons. At the second horizon of the event evolutionary processes, the gauge fields yield the holomorphic superphase operation, continue to give rise to the next horizons, and develop a complex event operation (2.8.1) in term of an infinite sum of sequence:

作为自然界的二象性，它对应着另一个过程，称为Y^-阴显式盛生 $(\dot{x}_\nu D_\nu)_j \wedge (\dot{x}^\mu D^\mu)_k$ 的过程，它需要对富有生命力的一个物理过程做出 Y^- 阴的反应或化归。伴随着一个 Y^+ 阳的自发演化开源，Y^- 显式繁衍的作用通常被排列和纠缠成一个反应链，以产生和耦合第二和第三层界之间的物质动态学中对称的弱电磁力和强引力。在事件演化过程的第二个层界中，规范场产生全形正则的宫位操作，继续产生下一个层界，以无限操作序列 (2.8.1)，发展成一个复数共轭的事件操作：

$$\check{\partial} = \dot{x}_\nu \zeta_\nu D_\nu = \dot{x}_\nu \zeta_\nu \partial_\nu + i\dot{x}_\nu \zeta_\nu \left(\Theta_\nu + \tilde{\kappa}_2^- \dot{\Theta}_{\mu\nu} + \cdots\right) \tag{8.1.1}$$

$$\Theta_\nu = \frac{\partial \check{\vartheta}(\lambda)}{\partial x_\nu} = \frac{e}{\hbar} A_\nu, \quad \dot{\Theta}_{\nu\mu} = \frac{\partial A_\mu}{\partial x_\nu} - \frac{\partial A_\nu}{\partial x_\mu} = F_{\nu\mu}^{-n}, \quad \tilde{\kappa}_2^- = 1/2 \tag{8.1.2}$$

$$\hat{\partial} = \dot{x}^\nu \dot{\zeta}^\nu D^\nu = \dot{x}^\nu \zeta^\nu \partial^\nu - i\dot{x}^\nu \zeta^\nu \left(\Theta^\nu + \tilde{\kappa}_2^+ \dot{\Theta}^{\nu\mu} + \cdots\right) \tag{8.1.3}$$

$$\Theta^\nu = \frac{\partial \hat{\vartheta}(\lambda)}{\partial x^\nu} = \frac{e}{\hbar} A^\nu, \quad \dot{\Theta}^{\nu\mu} = \frac{\partial A^\mu}{\partial x^\nu} - \frac{\partial A^\nu}{\partial x^\mu} = F_{\nu\mu}^{+n}, \quad \tilde{\kappa}_2^+ = (\tilde{\kappa}_2^-)^* \tag{8.1.4}$$

The superphase Θ^ν is under a series of the event λ actions, giving rise to horizon of the vector potentials $F_{\nu\mu}^{\pm n}$. Therefore, the second and third horizon fields are emerged and unfold into the following expressions:

宫位 Θ^ν 在一系列事件 λ 的作用下，产生了层界的矢量势气场 $F_{\nu\mu}^{\pm n}$。因此，第二和第三层界场呈现并展开为以下表达式：

$$\check{\partial} = \dot{x}_\nu \zeta_\nu D_\nu = \dot{x}_\nu \zeta_\nu \partial_\nu + i\dot{x}_\nu \zeta_\nu \left(\frac{e}{\hbar} A_\nu + \frac{1}{2} F_{\nu\mu}^{+n} + \cdots\right) \tag{8.1.5}$$

$$\hat{\partial} = \dot{x}^\nu \dot{\zeta}^\nu D^\nu = \dot{x}^\nu \zeta^\nu \partial^\nu - i\dot{x}^\nu \zeta^\nu \left(\frac{e}{\hbar} A^\nu + \frac{1}{2} F_{\nu\mu}^{-n} + \cdots\right) \tag{8.1.6}$$

where e is a coupling constant of the bispinor fields. Naturally, defined as the event operation or similar to the classical *Spontaneous Breaking*, it involves the evolutionary and symmetric processes of the natural *Creation* and its complement duality known as *Annihilation*.

其中，e 是双旋子的耦合常数。自然地，它被定义为事件操作或类似于经典的自发破缺，涉及到自然**创造**的进化和对称过程，及其互补相辅的二象性**湮灭**过程。

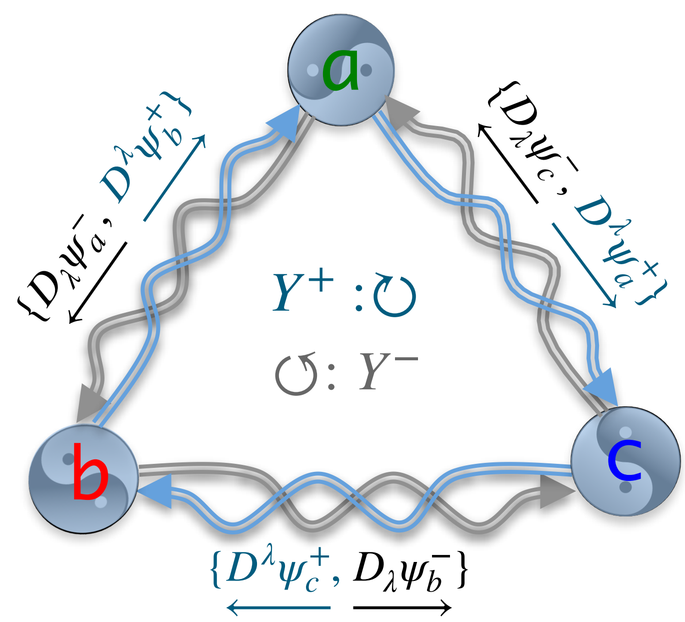


Figure 8.1.1: Two Implicit Loops of Triple Explicit Entanglements

图 *8.1.1:* 双隐螺和三显旋的纠缠

As a part of infrastructure of universe, the principle of the chain of least reactions in nature is for three particles to form a loop. Confined within a triplet group, the particles jointly institute a double streaming entanglement with the three action states, illustrated in Figure 8.1.1, introduced in June 6th of 2018. The actions of double wedge circulations $\wedge$ in the figure below have the natural interpretation of the entangling processes:

作为宇宙基础设施的一个部分，自然界中最小反应链的原理是三个粒子形成一个环。局限于三态群模块，与三个作用态联合形成一个双流纠缠，如图8.1.1所示，于2018年6月6日引入。 上图中，双螺三旋环流作用的楔形积 $\wedge$ 符号，对缠绕过程有着如下的自然解释：

$$\circlearrowleft : \ (D_\lambda\psi_a^- \to D_\lambda\psi_b^- \to D_\lambda\psi_c^-)^{\urcorner} \qquad : \textit{Right-hand Loop 右旋} \qquad (8.1.7)$$

$$\circlearrowright : \ {}^{\ulcorner}(D^\lambda\psi_b^+ \leftarrow D^\lambda\psi_c^+ \leftarrow D^\lambda\psi_a^+) \qquad : \textit{Left-hand Loop 左旋} \qquad (8.1.8)$$

$$\{D_\lambda\psi_a^-, D^\lambda\psi_b^+\}, \{D_\lambda\psi_b^-, D^\lambda\psi_c^+\}, \{D_\lambda\psi_c^-, D^\lambda\psi_a^+\} \qquad : \textit{Triple States 三态} \qquad (8.1.9)$$

Acting upon each other, the triplets are streaming a pair of the Y^-Y^+ *Double-Loops* implicitly, and the *Triple States* of entanglements explicitly.

在相辅相成的作用中， 隐式地传输一对 $Y^{-}Y^{+}$ 双环流，显式地传输三子纠缠态。

Essentially as an integration of the above formulae, the above principle of *Evolutionary Processes* outlined philosophically ($\hat{\partial}^{\lambda} \circlearrowleft \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \circlearrowright \check{\partial}_{\lambda}$) is concisely translatable into the equations of nature in mathematical formula:

从本质上讲，上述公式阐明了进化过程与哲学原理（$\hat{\partial}^{\lambda} \circlearrowleft \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \circlearrowright \check{\partial}_{\lambda}$）相结合，由此，可以简明地转化为数学公式中的自然方程：

$$S_2^+ + R_2^+ \circlearrowleft S_1^+ + R_1^+ \rightleftharpoons S_2^- + R_2^- \circlearrowright S_2^- + R_2^- \qquad (8.1.10)$$

This fundamental loop structure serves as the generators of the infrastructure. As a fascinating consequence, one can anticipate the following results:

这个基本循环结构生成一个基础架构和伺服激发子。作为一个极其迷人的结果，我们可以预期以下结果：

1. *Applying the principle of Least Operations of Eq. (3.5.1-2) on World Equations, the events of the fundamental generators of the infrastructure to produce or give rise to Pauli Matrix, Direct Equation, Schrödinger Equation, Klein–Gordon Equation, etc., known as Quantum Physics.*

   将式 *(3.5.1-2)* 中的最小作用原理应用于世界方程组，基本激发子事件可以产生或收获泡利矩阵、狄拉克方程、薛定谔方程、克莱因-戈登方程，等，即，著名的量子物理学。

2. *With the principle of Double Loops of Triple Entanglements of Figure 8.1.1, the nature orchestrates the potential fields of the infrastructure to produce Gauge Theory, Quantum Chromodynamics, Standard Model, etc., named as Quantum Ontology.*

   利用图 *8.1.1* 所示的“双螺三旋”的纠缠原理，大自然精心安排和协调了基础设施的势气场，收获了规范场论、量子色动力学、标准模型等，即，被成之称为量子本体论。

At this horizon, some objects acquire a part of their mass quantity (exert weak forces for partial physical interactions) and some have zero-mass (interactive virtually without force). Essentially, they are building blocks of a fully physical domain *SU*(3). Only at the third horizon, particles have their full mass (strong force interactions). Associated with the mass enclave, a force is natural in physical domain but not in virtual world.

在第二个层界中，一些模块获得一部分质量（对偏物理相互作用释放弱力），而另一些模块获得零质量（几乎没有力的相互作用），实质上，它们是全物态域 *SU*(3) 的构建块。只有在第三个层界处，才获得全质量的粒子（形成强力相互作用）。所以，力在物理层域中是一个从属于质量飞地而形成的自然现象；但是，在虚态世界中，不存在质量飞地，也就不存在力，更不存在引力奇点。

2. 演化方程 Evolutionary Equations

From the first type of *World Equations* (3.4.2), the virtual superphase events under a pair of the $Y^{-}Y^{+}$ potential reactions $\psi^{\pm}$ evolve their density fluxions of the circular process, simultaneously:

根据第一类世界方程 (3.4.2) 式，一对 $Y^{-}Y^{+}$ 势气 $\psi^{\pm}$ 反应下的虚态宫位事件，同时演化其循环过程的密度流，由如下公式阐明：

$$\begin{aligned}\hat{W}_n &= \left[\psi^{+}(\hat{x},\lambda)+\kappa_1^{+}\hat{\partial}\psi^{+}(\hat{x},\lambda)\cdots\right]\left[\psi^{-}(\check{x},\lambda)+\kappa_1^{-}\check{\partial}\psi^{-}(\check{x},\lambda)\cdots\right]\\ &= \psi^{+}\psi^{-}+k_J J_s+k_{\wedge}\left(\hat{\partial}\psi^{+}\right)\wedge\left(\check{\partial}\psi^{-}\right)\end{aligned} \tag{8.2.1}$$

$$J_s=\frac{\hbar c^2}{2E^{-}}\left(\psi^{+}\check{\partial}\psi^{-}+\psi^{-}\hat{\partial}\psi^{+}\right) \tag{8.2.2}$$

where k_J or $k_{\wedge}$ is a constant. This equation is named as *Equations of Ontological Evolution.* The first term $\psi^{+}\psi^{-}$ is the ground density, and the second term is the probability current or flux J_s. Apparently, the third term constructs the horizon interactions. Since the tensor product has two symmetric types, the tensors react upon each other, symbolized by the wedge product $\wedge$ as the following:

其中，k_J 或 $k_{\wedge}$ 是常数。这个方程被称为**本体演化方程**。第一项 $\psi^{+}\psi^{-}$ 是基密度，第二项是概率通量流 J_s。显然，第三项构成了层界间的相互作用。由于张量积有两种对称类型，张量之间的相互作用，可用楔形积 $\wedge$ 表示如下：

$$\begin{aligned}\left(\hat{\partial}\psi_j^{+}\right)\wedge\left(\check{\partial}\psi_k^{-}\right) &= \left(\dot{x}^{\mu}\zeta^{\mu}D^{\lambda}\psi_j^{+}\right)\wedge\left(\dot{x}_{\nu}\zeta_{\mu}D_{\lambda}\psi_k^{-}\right)\\ &= \dot{x}^{\mu}\zeta^{\mu}\left(\partial^{\mu}-i\frac{e}{\hbar}A^{\mu}-\tilde{\kappa}_2^{+}F_{\mu\nu}^{+n}\right)\psi_j^{+}\wedge\dot{x}_{\nu}\zeta_{\nu}\left(\partial_{\nu}+i\frac{e}{\hbar}A_{\nu}+\tilde{\kappa}_2^{-}F_{\nu\mu}^{-n}\right)\psi_k^{-}\end{aligned} \tag{8.2.3}$$

Named as *Equations of Evolutionary Forces*, the above equation unifies all of the known forces of the weak, strong, gravitation and electromagnetism. The symbol $j,k\in\{a,b,c\}$ indicates a loop chain of three particles.

上面方程被称为**演化力方程**，它将所有已知的弱、强、引力和电磁力统一了起来。符号 $j,k\in\{a,b,c\}$表示由三个粒子组成的循环链。

This can be conveniently expressed in forms of *Horizon Lagrangians* of virtual creation and physical reproduction. Considering the second orders of the ψ_n^- and ψ_n^+ times into (3.8.10, 2.8.20) equations, and substituting them into the *Lagrangians* (3.2.7-8), respectively, one comes out with the quantum fields that extend a pair of the first order *Dirac* equations of (4.8.3-4) into the second orders in the forms of Lagrangians respectively:

这也可以方便地把虚态创造和物态盛生表示为层界拉格朗日表达式。考虑到阴场 ψ_n^- 和阳场 ψ_n^+ 的二次阶，化为 (3.8.10，2.8.20) 方程式，并分别代入拉格朗日 (3.2.7-8) 式，将 (4.8.3-4) 的一对一阶狄拉克方程，分别以拉格朗日形式推广到二阶场，这就得到了量子场，：

$$\tilde{\mathscr{L}}_s^{\pm} = -\frac{1}{c^2}\left[\hat{\partial}^\lambda \hat{\partial}^\lambda, \check{\partial}_\lambda \check{\partial}_\lambda\right]_s^{\pm} \tag{8.2.4}$$

$$\tilde{\mathscr{L}}_s^{+} = \overline{\psi}_n^-\left(i\frac{\hbar}{c}\zeta^\mu D^\mu + m\right)\psi_n^+ - \frac{1}{c^2}\overline{\psi}_n^-\zeta^\mu \check{\partial}_\lambda \hat{\partial}_\lambda \psi_n^+ \tag{8.2.5}$$

$$\tilde{\mathscr{L}}_s^{-} = \overline{\psi}_n^+\left(i\frac{\hbar}{c}\zeta_\nu D_\nu - m\right)\psi_n^- - \frac{1}{c^2}\overline{\psi}_n^+\zeta_\nu \hat{\partial}_\lambda \check{\partial}^\lambda \psi_n^- \tag{8.2.6}$$

As a pair of dynamics, it defines and generalizes a duality of the interactions among spinors, electromagnetic and gravitational fields. The nature of the commutator $[\hat{\partial}_\lambda \check{\partial}^\lambda, \check{\partial}_\lambda \hat{\partial}_\lambda]^{\pm}$ is the horizon interactions (8.2.3) with the mapping $\hat{\partial}_\lambda \check{\partial}^\lambda \mapsto (\dot{x}^\mu \zeta^\mu D^\lambda \hat{\psi}) \wedge (\dot{x}^\nu \zeta^\nu D_\lambda \check{\psi})$. Applying the transform conversion (4.5.6-7), we generalize the above equations for a group of the triplet quarks in form of a set of the *Lagrangians of Ontological Evolution*:

作为一对动态学方程，它定义和推广了旋子场、电磁场和引力场相互作用的二象对偶性。对易交互 $[\hat{\partial}_\lambda \check{\partial}^\lambda, \check{\partial}_\lambda \hat{\partial}_\lambda]^{\pm}$ 的本质是与层界相互作用(8.2.3) 的映射 $\hat{\partial}_\lambda \check{\partial}^\lambda \mapsto (\dot{x}^\mu \zeta^\mu D^\lambda \hat{\psi}) \wedge (\dot{x}^\nu \zeta^\nu D_\lambda \check{\psi})$。应用演化传播和变换 (4.5.6-7) ，我们将上述方程形成以三重态夸克为一组的**拉格朗日演化方程**：

$$\tilde{\mathscr{L}}_h^{a} = \tilde{\mathscr{L}}_s^{+} + 2\tilde{\mathscr{L}}_s^{-} = \mathscr{L}_D^{\mp} + \left(\overline{\psi}_c^-\frac{\dot{x}_\nu}{c}\zeta^\nu D^\lambda \psi_a^+\right) \wedge \left(\overline{\psi}_b^+\frac{\dot{x}^\mu}{c}\zeta_\mu D_\lambda \psi_a^-\right) \tag{8.2.7}$$

$$\tilde{\mathscr{L}}_h^{a} \equiv \mathscr{L}_D^{\mp} + \mathscr{L}_\psi + \mathscr{L}_C + \mathscr{L}_F + \mathscr{L}_M \qquad : \psi_k^+ \psi_j^- \to 1 \tag{8.2.8}$$

$$\mathscr{L}_D^{\mp} \equiv \overline{\psi}_k^{\pm} i \frac{\hbar}{c} \zeta^\mu D_\nu \psi_j^{\mp} \mp m_j \qquad : j, k \in \{a, b, c\} \qquad (8.2.9)$$

$$\mathscr{L}_\psi = -\frac{1}{c^2}\left(\overline{\psi}_c^- \dot{x}_\nu \zeta^\mu \partial^\mu \psi_a^+\right)\left(\overline{\psi}_b^- \dot{x}^\mu \zeta_\nu \partial_\nu \psi_a^-\right) \qquad : \dot{x}^\nu \dot{x}^\mu = c^2 \qquad (8.2.10)$$

$$\mathscr{L}_C = \frac{e}{2\hbar}\left\langle \zeta_\nu A_\nu \zeta^\mu F_{\mu\nu}^{+n}, \zeta^\mu A^\mu \zeta_\nu F_{\nu\mu}^{-n}\right\rangle_{jk}^- \qquad : \tilde{\kappa}_2^+ = \tilde{\kappa}_2^- = \frac{1}{2} \qquad (8.2.11)$$

$$\mathscr{L}_F = i\frac{e}{\hbar}\left[\zeta^\nu \partial^\nu(\zeta_\mu A_\mu), \zeta_\mu \partial_\mu(\zeta^\nu A^\nu)\right]_{jk}^- - \frac{e^2}{\hbar^2}\left(\zeta^\mu A^\mu \zeta_\nu A_\nu\right)_{jk} \qquad (8.2.12)$$

$$\mathscr{L}_M = \frac{i}{2}\left[\zeta^\nu \partial^\nu(\zeta_\nu F_{\nu\mu}^{-n}), \zeta_\mu \partial_\mu(\zeta^\mu F_{\mu\nu}^{+n})\right]_{jk}^- - \frac{1}{4}\left(\zeta^\nu F_{\nu\mu}^{+n}\right)_j \left(\zeta_\mu F_{\mu\nu}^{-n}\right)_k \qquad (8.2.13)$$

where the Lagrangians are normalized at $\psi_k^+ \psi_j^- = 1$. The fine-structure constant $\alpha = e^2/(\hbar c)$ arises naturally in coupling horizon fields. The $\mathscr{L}_\psi$ has the kinetic motions under the second horizon, the forces of which are a part of the horizon transform and transport effects characterizable explicitly when observed externally to the system. The $\mathscr{L}_D$ is a summary of Dirac equations over the triple quarks. The $\mathscr{L}_C$ is the binding or coupling force between the horizons. The $\mathscr{L}_F$ has the actions giving rise to the electromagnetic and gravitational fields of the third horizon. Similarly, the $\mathscr{L}_M$ has the actions giving rise to the next horizon.

其中，拉格朗日归一化在 $\psi_k^+ \psi_j^- = 1$ 处。精细结构常数 $\alpha = e^2/(\hbar c)$ 在耦合层场中自然产生。$\mathscr{L}_\psi$ 是在第二层界下具有运动弱力，当在系统外部观察时，可以显现地表征这些力作为一个层界变换和输运效应的组成部分。$\mathscr{L}_D$ 是三夸克的狄拉克方程的迭代。$\mathscr{L}_C$ 是层界之间的束缚力或耦合力。$\mathscr{L}_F$ 具有产生第三层界的电磁场和引力场的作用。同样地，$\mathscr{L}_M$ 也有引发下一个层界的行为。

At the infrastructural core of the evolution, it implies that a total of the three states exists among two $\tilde{\mathscr{L}}_s^-$ and one $\tilde{\mathscr{L}}_s^+$ dynamics to compose an integrity of the dual fields, revealing naturally the particle circling entanglement of three “colors”, uncoiling the event actions, and representing an essential basis of the “global gauge.” The *Standard Model*, developed in the mid-1960-70s breaks various properties of the weak neutral currents and the *W* and *Z* bosons with great accuracy.

在演化基础结构的核心处，意味着在两个 $\tilde{\mathscr{L}}_s^-$ 和一个 $\tilde{\mathscr{L}}_s^+$ 动态结构中，共存在三个态，它们构成了一个完整的对偶场，由此，自然而然地揭示了粒子围绕三个“颜色”的纠缠，展开了事件的作用，代表了“全局规范”的必要基础；20世纪60-70年代中期发展起来的标准模型，非常精确地突破了弱中性电流和W、Z玻色子的各种性质。

Specially integrated with the superphase potentials, our scientific evaluations to this groundwork of ***Evolutionary Equations*** (8.2.7) might promote a way towards concisely exploring physical nature, universal messages, and beyond.

特别是与宫位势气场相结合，这个演化方程(8.2.7) 的基础工程，为促进科学评估提供了一种简洁地探索物理本质、宇宙信息和未来科学的方法。

3. 弱电理论 Theory of Electroweak Forces

Considering $\zeta^\mu \to \gamma^\mu$ and ignoring the higher orders and the coupling effects, we simplify the $\mathscr{L}_F$ and $\mathscr{L}_M$ for the Y^+ streaming *Lagrangian* of (8.2.12-13):

考虑到忽略高阶和耦合效应 $\zeta^\mu \to \gamma^\mu$ ，我们简化了(8.2.12-13) 的阳 (Y^+) 能流的 拉格朗日 $\mathscr{L}_F$ 和 $\mathscr{L}_M$：

$$\mathscr{L}_F(\gamma) \approx -\frac{e^2}{\hbar^2}\left(\gamma^\mu A^\mu \gamma_\nu A_\nu\right)_{jk} \equiv -\frac{1}{4} W_{\mu\nu}^{+j} W_{\nu\mu}^{-k} \qquad (8.3.1)$$

$$\mathscr{L}_M(\gamma) \approx -\frac{1}{4}\left(\gamma^\nu F_{\nu\mu}^{+n} \gamma_\mu F_{\mu\nu}^{-n}\right)_{jk} = -\frac{1}{4} F_{\nu\mu}^{+j} F_{\mu\nu}^{-k} \qquad (8.3.2)$$

At the second horizon, the $\zeta^\mu \to \gamma^\mu$ is contributed to the weak isospin fields $W_{\mu\nu}^{+j} W_{\nu\mu}^{-k}$ of coupling actions. Meanwhile, at the third horizon, the gamma γ^μ fields are converted and accord to the hypercharge $F_{\nu\mu}^{+j} F_{\mu\nu}^{-k}$ actions of electroweak fields. Therefore, the *Lagrangian* $\tilde{\mathscr{L}}_h^a$ becomes $\tilde{\mathscr{L}}_h^a \approx \mathscr{L}_D + \mathscr{L}_F + \mathscr{L}_M \equiv \mathscr{L}_Y^a$, which, in mathematics, comes out as *Quantum Electrodynamics* (*QED)* that extends from a pair of the first order *SU*(2) *Dirac* equations (4.8.1) to the second orders in the form of a *SU*(2) + *SU*(3) *Lagrangian*:

在第二层界，$\zeta^\mu \to \gamma^\mu$ 是引起耦合作用的弱同位旋场 $W_{\mu\nu}^{+j} W_{\nu\mu}^{-k}$。同时，在第三层界，伽马 γ^μ 场发生转换，并给出弱电场的超荷 $F_{\nu\mu}^{+j} F_{\mu\nu}^{-k}$ 作用。因此，拉格朗日$\tilde{\mathscr{L}}_h^a$ 转换变成 $\tilde{\mathscr{L}}_h^a \approx \mathscr{L}_D + \mathscr{L}_F + \mathscr{L}_M \equiv \mathscr{L}_Y^a$，在数学上，它描述的是量子电动力学 (QED) ，从一对 SU(2) 的一阶狄拉克方程 (4.8.1) 扩展到二阶形式为 SU(2)+SU(3) 的拉格朗日：

$$\mathscr{L}_Y^a = \left(\bar{\psi}_j^{\mp} i \frac{\hbar}{c} \gamma^\nu D_\nu \psi_i^{\pm}\right)_{jk} - \frac{1}{4} F_{\nu\mu}^{+j} F_{\mu\nu}^{-k} - \frac{1}{4} W_{\mu\nu}^{+j} W_{\nu\mu}^{-k} \qquad (8.3.3)$$

where $j, k \in \{a, b, c\}$ is the triplet particles. When the strong torque of gravitation fields are ignored, the above equation is known as *Yang-Mills* theory, introduced in 1954. As one of the most important results, *Yang–Mills* theory represents *Gauge Invariance*:

其中，$j,k \in \{a,b,c\}$ 是三态粒子。当忽略重力场的强力矩时，上述方程称为杨-米尔斯理论，于1954年提出。作为最重要的结果之一，杨-米尔斯理论代表了规范不变性：

1. *The classic Asymptotic Freedom from a view of the physical coordinates;*

   从物理坐标的观点看经典的渐近自由；

2. *A proof of the confinement property in the presence of a group of the triple-color particles; and*

   证明了三色粒子群存在监禁特性

3. *Mass acquisition processes symmetrically from the second to third horizon, describable by the (4.12.3-4) equations.*

4. 从第二到第三层界对称性的质量采集过程，可由 *(4.12.3-4)* 方程描述

Since the quanta of the superphase fields is massless with gauge invariance, *Yang–Mills* theory represents that particles are semi-massless in the second horizon, and acquire their full-mass through evolution of the full physical horizon. Extended to the philosophical interpretation, it represents mathematically: conservation of *Double Loops of Triple Entanglements*, or law of *Conservation of Evolutions of Ontology* illustrated by Figure 8.1.1.

由于宫位场的量化子具有无质量的规范不变性，杨-米尔斯理论阐明了粒子在第二层界是一半处于无质量状态，并通过全物理层界的演化获得其全部质量。扩展到哲学上的解释，它在数学上表现为：三态纠缠的双环守恒定律，即，由图8.1.1所示的本体论演化守恒定律。

4. 规不变性 Gauge Invariance

The magic lies at the heat of the horizon process driven by the entangling action $\varphi_n^- \check{\partial}^\lambda \hat{\partial}_\lambda \phi_n^+$, which gives rise from the ground and second horizon *SU*(2)×*U*(1) implicitly to the explicit states *SU*(2) through the evolutionary event operations, The horizon force is symmetrically conducted or acted by an ontological process as a part of the evolutionary actions that give rise to the next horizon *SU(3*). Under a pair of the event operations, an evolutionary action creates and populates a duality of the quantum symmetric density $\psi_n^+ \psi_n^-$ for the entanglements among spins, field transforms, and torque transportations. Evolving into the *SU(3)* horizon, the gauge symmetry is associated with the electro-weak and graviton-weak forces to further generate masses that particles separate the electromagnetic and weak forces, and embrace with the strong coupling forces globally. The first order of the commutators is the gauge field:

神奇的核心之处在于驱动纠缠作用 $\varphi_n^- \check{\partial}^\lambda \hat{\partial}_\lambda \phi_n^+$ 的层界过程，它通过演化事件操作，从基层和第二层界 SU(2)×U(1) 隐式地过度到显式态SU(2)，层界力是作为演化行为的一个部分，由一个本体过程对称性地引导或作用下，产生下一个层界 SU(3)。在一对事件的操作下，一个进化行为的自旋、场变换和转矩传输之间的纠缠，创造并充实了量子对称密度 $\psi_n^+ \psi_n^-$ 的对偶性。演化到 SU(3) 层界后，规范对称性与弱电力和弱引力形成整体相结合，从而，进一步产生质量，使粒子分离电磁力和弱力，并在全域范围内与强耦合力相结合。交互对易的第一级规范场是：

$$\mathscr{L}_F(\gamma) = i\frac{e}{\hbar}\left[\gamma_\mu \partial_\mu (\gamma^\nu A_a^\nu), \gamma^\nu \partial^\nu (\gamma_\mu A_\mu^a)\right]^- - \frac{e^2}{\hbar^2}\left(\gamma_\mu A_\mu^b \gamma^\nu A_c^\nu\right) \qquad (8.4.1)$$

As the gamma γ^ν function is a set of the constant matrices, it might be equivalent in mathematics to the *Gauge Invariance* of *Standard Model*:

由于伽马 γ^ν 函数是一组常数矩阵，在数学上它可能等价于标准模型的规范不变性：

$$\mathscr{L}_F(\gamma) \mapsto F^a_{\nu\mu} = \partial_\nu A^a_\mu - \partial_\mu A^a_\nu + g_\gamma f^{abc}_\gamma A^b_\nu A^c_\mu \tag{8.4.2}$$

where the $F^a_{\nu\mu}$ is obtained from potentials $eA^n_\mu/\hbar$, g_γ is the coupling constant, and the f^{abc}_γ is the structure constant of the gauge group *SU*(2), defined by the group generators of the *Lie* algebra. From the given *Lagrangians* $\mathscr{L}_C$ and $\mathscr{L}_M$ in term of the gamma ζ^ν matrix*,* one can derive to map the equations of motion dynamics, expressed by the following：

其中，$F^a_{\nu\mu}$ 是从势气场获得的 $eA^n_\mu/\hbar$，g_γ 是耦合常数，f^{abc}_γ 是规范群 *SU*(2) 的结构常数，由李代数的群生成子定义。从给定的拉格朗日 $\mathscr{L}_C$ 和 $\mathscr{L}_M$ 中的伽马 ζ^ν 矩阵，由此可以推导出运动动力学方程，表示如下

$$\partial^\mu(\zeta^\mu F^a_{\mu\nu}) + gf^{abc}\zeta^\mu A^b_\mu \zeta_\nu F^c_{\mu\nu} = -J^a_\nu \tag{8.4.3}$$

where J^a_ν is the potential current. Besides, it holds an invariant principle of the double-loop implicit entanglements, or known as a *Bianchi or Jacobi* identity:

式中 J^a_ν 是电位流。此外，它还具有双环隐式纠缠的不变原理，或者称为 Bianchi 或 Jacobi 恒等式：

$$(D_\mu F_{\nu\kappa})^a + (D_\kappa F_{\mu\nu})^b + (D_\nu F_{\kappa\mu})^c = 0 \tag{8.4.4a}$$

$$[D_\mu, [D_\nu, D_\kappa]] + [D_\kappa, [D_\mu, D_\nu]] + [D_\nu, [D_\kappa, D_\mu]] = 0 \tag{8.4.4b}$$

As a property of the placement of parentheses in a multiple product, it describes how a sequence of events affects the result of the operations. For commutators with the associative property $(xy)z = x(yz)$, any order of operations gives the same result or a loop of the triplet particles is gauge invariance.

作为在多个乘积中放置括号的属性，它们描述了事件序列如何影响操作结果。对于具有结合性质 $(xy)z = x(yz)$ 的交互对易子，任何一个序列操作都会得到相同的结果，或者三态粒子的循环是规范不变的。

Yang–Baxter Equation - In physics, the loop entanglement of Figure 8.1.1 involves a reciprocal pair of both normal particles and antiparticles. This consistency preserves their momentum while changing their quantum internal states. It states that a matrix R, acting on two out of three objects, satisfies the following equation

杨-巴克斯特方程 - 在物理学中，图8.1.1中的环状纠缠包含了一对正常粒子和反粒子的对偶对。这种一致性在改变了它们的量子内部状态的同时，还保持了它们的动量守恒。它表明一个矩阵 R，作用于三个物体中的两个，满足下面的方程：

$$(R \otimes \mathbf{1})(\mathbf{1} \otimes R)(R \otimes \mathbf{1}) = (\mathbf{1} \otimes R)(R \otimes \mathbf{1})(\mathbf{1} \otimes R) \qquad : e^{i\vartheta} \mapsto e^{-i\vartheta} \qquad (8.4.5)$$

where *R* is an invertible linear transformation on world planes, and $\mathbf{I}$ is the identity matrix. Under the yinyang principle of $Y^{-}\{e^{i\vartheta}\} \mapsto Y^{+}\{e^{-i\vartheta}\}$, a quantum system is integrable with or has conservation of the particle-antiparticle entanglement or philosophically *Law of Conservation of Antiparticle Entanglement*.

其中，*R* 是世界平面上的可逆线性变换，$\mathbf{I}$ 是单位矩阵。在 $Y^{-}\{e^{i\vartheta}\} \mapsto Y^{+}\{e^{-i\vartheta}\}$ 的阴阳原理下，量子系统具有整合性和粒子-反粒子纠缠守恒性，哲学上标为反粒子纠缠守恒定律。

5. 量子色动力学 Quantum Chromodynamics

Given the rise of the horizon from the scalar potentials to the vector fields through the tangent transportations, the *Lagrangian* above can further give rise from transform-primacy $\zeta^\nu \approx \gamma^\nu$ at the second horizon $\gamma^\nu F_{\nu\mu}^{\pm n}$ to the strong torque at the third horizon, where the chi $\zeta^\nu \approx \chi^\nu$ fields correspond to the strength tensors $\chi^\nu F_{\nu\mu}^{\pm n}$ for the spiral actions of superphase modulation. Once at the third horizon, the field forces among the particles are associated with the similar gauge invariance of the gamma to chi $\gamma^\nu \to \chi^\nu$ transportation dynamics, given by (8.2.9) $\mathscr{L}_D$ and (8.2.12) for strong gauge matrix $G_{\nu\mu}^a \equiv \mathscr{L}_F(\chi)$ as the following:

考虑到层界通过切向传输从标量位上升到矢量场，前面的拉格朗日可以进一步从第二个层界 $\zeta^\nu \approx \gamma^\nu$ 伽马场转换为第三个层界的强力矩，其中，恺 chi $\zeta^\nu \approx \chi^\nu$ 场，对应于宫位螺旋作用的强度张量 $\chi^\nu F_{\nu\mu}^{\pm n}$ 调制。一旦到达第三个层界，粒子间的场力与伽马到恺 $\gamma^\nu \to \chi^\nu$ 输动力的有关规范不变性是类似的，由 (8.2.9) $\mathscr{L}_D$ 和 (8.2.12) $G_{\nu\mu}^a \equiv \mathscr{L}_F(\chi)$ 给出强规范矩阵如下：

$$\mathscr{L}_{QCD}(\chi) = \bar{\psi}_n^- \big(i\frac{\hbar}{c}\gamma_\nu D_\nu - m\big)\psi_n^+ - \frac{1}{4}G_{\nu\mu}^n G_{\nu\mu}^n + \mathscr{L}_{CP}(\chi) \tag{8.5.1}$$

$$G_{\nu\mu}^a \equiv \frac{2e^2}{\hbar^2}\big(\chi_\mu A_\mu^b \chi^\nu A_c^\nu\big) - i\frac{2e}{\hbar}\big[\chi_\mu \partial_\mu(\chi^\nu A_a^\nu), \chi^\nu \partial^\nu(\chi_\mu A_\mu^a)\big]^- \tag{8.5.2}$$

where *c* is the strong coupling. Coincidentally, this is similar to the quark coupling theory, the *Standard Model*, known as classical *QCD,* discovered in 1973. Philosophically, the torque chi-matrix of gravitational fields plays an essential role in kernel interactions, appearing as a type of strong forces. It illustrates that the carrier particles of a force can radiate further carrier particles during the rise of horizons. The interactions, coupled with the strong forces, are given by the term of *Dirac* equation under the spiral torque of chi-matrix:

其中 *c* 是强耦合数。巧合的是，这类似于夸克耦合理论，标准模型，被称为经典QCD，于1973年发现。从哲学上讲，引力矩场的恺-矩阵 在核相互作用中起着至关重要的作用，表现为一种强力。它显示了在层界上升的过程中，力的载体粒子可以进一步辐射载体粒子。在恺-矩阵的螺旋力矩耦合下，相互作用的强作用力由狄拉克方程项给出：

$$\mathscr{L}_{CP}(\chi) = i\frac{\hbar}{c}\left(\bar{\psi}_n^+ \chi_\nu D_\nu \psi_n^-\right)_{jk} \mapsto -\frac{e}{c}\left(\bar{\psi}_n^+ \chi_\nu A_\nu \psi_n^-\right)_{jk} \qquad (8.5.3)$$

Mathematically, *QCD* is an abelian gauge theory with the symmetry group *SU(3)*×*SU*(2)×*U*(1). The gauge field, which mediates the interaction between the charged spin-1/2 fields, involves the coupling fields of the torque, hypercharge and gravitation, classically known as *Gluons* - the force carrier, similar to photons. As a comparison, the gluon energy for the spiral force coupling with quantum electrodynamics has a traditional interpretation of *Standard Model*

在数学上，*QCD*是一个具有对称群 *SU(3)*×*SU(2)*×*U(1)* 的阿贝尔规范理论。规范场派生了带电自旋1/2场之间的相互作用，涉及转矩、超荷电和引力的耦合场，经典地称为胶子 - 力的载体，它类似于光子。作为比较，螺旋力与量子电动力学耦合的胶子能量，对标准模型有传统的解释

$$\mathscr{L}_{CP} = ig_s\left(\bar{\psi}_n^+ \gamma^\mu G_\mu^a T^a \psi_n^-\right)_{jk} \qquad : \chi_\nu A_\nu^a \mapsto \gamma^\mu G_\mu^a T^a \qquad (8.5.4)$$

where g_s is the strong coupling constant, G_μ^a is the 8-component *SO*(3) gauge field, and T_{ij}^a are the 3 × 3 *Gell-Mann* matrices, introduced in 1962, as generators of the *SU*(2) color group.

其中，g_s 是强耦合常数，G_μ^a 是8-分量 *SO*(3) 规范场，T_{ij}^a 是1962年引入的 3 × 3 Gell-Mann 矩阵，作为 *SU*(2) 色群的生成子。

For a physical system in spatial evolution at any given time as *Time-Independent Horizon Infrastructure*, the equation of *Pauli* vector identity (4.10.5) can be used to abstract the *Evolutionary Equations* (8.2.3) and its *Lagrangians of Ontological Evolution* (8.2.7) to a set of special formulae:

对于一个在任何给定时刻作为时间无关的层界基础设施而进行空间演化的物理系统，可用泡利向量恒等式方程 (4.10.5) 将演化力方程 (8.2.3) 式和拉格朗日演化方程 (8.2.7) 式抽象为一组特殊的公式：

$$\tilde{\mathscr{L}}_h^a = \tilde{\mathscr{L}}_s^+ + 2\tilde{\mathscr{L}}_s^- = \mathscr{L}_D^{-a} + \overline{\psi}_j\left(\hat{\partial} \wedge \check{\partial}\right)\psi_k \qquad : \nu, \mu \in \{1,2,3\} \qquad (8.5.5)$$

$$\hat{\partial} \wedge \check{\partial} = \dot{x}^\mu \dot{x}_\nu \left(\hat{D} \cdot \check{D} + i\zeta^\mu \cdot \hat{D} \times \check{D}\right) \qquad : \tilde{\zeta}^\nu \mapsto \zeta^\nu = \gamma^\nu + \chi^\nu \qquad (8.5.5)$$

$$\hat{D} \cdot \check{D} = \left(\partial^\mu - i\frac{e}{\hbar}A^\mu - \frac{1}{2}F_{\mu\nu}^{+n}\cdots\right) \cdot \left(\partial_\nu + i\frac{e}{\hbar}A_\nu + \frac{1}{2}F_{\nu\mu}^{-n}\cdots\right) \qquad (8.5.6)$$

$$\hat{D} \times \check{D} = \left(\partial^\mu - i\frac{e}{\hbar}A^\mu - \frac{1}{2}F_{\mu\nu}^{+n}\cdots\right) \times \left(\partial_\nu + i\frac{e}{\hbar}A_\nu + \frac{1}{2}F_{\nu\mu}^{-n}\cdots\right) \qquad (8.5.7)$$

Introduced at August 26th of 2018, this concludes a unification of the spatial horizon and operations of the quantum fields philosophically describable by the two implicit loops $\hat{D} \times \check{D}$ of triple explicit $\hat{D} \cdot \check{D}$ entanglements, concisely and fully pictured by Figure 8.1.1.

引入于2018年8月26日，这一公式总结了量子场的空间层界和各类操作的统一，其哲学上的含义描述的正是三重显式 $\hat{D} \cdot \check{D}$ 纠缠的两个隐性 $\hat{D} \times \check{D}$ 环，由图8.1.1精密全绎了。

6. 场破缺力 Forces of Field Breaking

Under the principle of the *Universal Topology*, the weak and strong force interactions are characterizable and distinguishable under each scope of the horizons. Philosophically, the nature comes out with the ***Law of Field Evolutions*** concealing the characteristics of *Horizon Evolutions*:

在宇宙拓扑原理下，每一层界范围内的弱力相互作用和强力相互作用都是可区分的。从哲学上看，自然界给出了场的演化规律，掩饰着层界演化的如下特征：

1. *Forces are not transmitted directly between interacting objects, but instead are described and interrupted by intermediary entities of fields.*

   力不直接在相互作用的物体之间传递，而是由场的中间态来描述和作用。

2. *Fields are a set of the natural energies that appear as dark or virtual, streaming their natural intrinsic commutations for living operations, and alternating the Y^-Y^+ supremacies consistently throughout entanglement.*

   场是一组自然能量，呈现为暗能量或虚能量，流动着它们自然生态操作的交互对易，并在纠缠中持续地交替着阳 *(Y^+)* 优势或阴优气 *(Y^-)* 场。

3. *At the second horizon SU(2), a force is incepted or created by the double loops of triple entanglements. The Y^+ manifold supremacy generates or emerges the off-diagonal elements of the potential fields embodying mass enclave and giving rise to the third horizon, a process traditionally known as Weak Interaction.*

   在第二层界 *SU(2)* 处，力是由三态双螺纠缠的衍生和创生。Y^+流形优势产生或出现势气场的非对角元素，包含质量飞地并形成第三层界，这一过程传统上被称为弱相互作用。

4. *As a natural duality, a stronger force is reproduced dynamically and animated symmetrically under the Y^- supremacy, dominated by the diagonal elements of the field tensors.*

作为一种自然的二象性，一个更强的力在 Y^- 优势下动态地繁衍和对称地盛生，主要以张量场的对角元素呈现出来。

5. *Together, both of the Y^-Y^+ processes orchestrate the higher horizon, composite the interactive forces, redefine the simple symmetry group U(1)×SU(2)×SU(3), and obey the entangling invariance, known as Ontological Evolution.*

   这两个过程同时协调了更高层次的界域，合成了各类相互作用力，重新构成了简单的对称群 *U(1)×SU(2)×SU(3)*，并遵守纠缠不变性，即，著名的本体进化.

6. *An integrity of strong nuclear forces is characterizable at the third horizon of the tangent vector interactions, known as gauge SU(3).*

   在切向矢量相互作用的第三个层界，形成规范*SU(3)*，用于描述完整性的强核力。

7. *Entanglement of the alternating Y^-Y^+ superphase processes in the above actions can prevail as a chain of reactions that gives rise to each of the objective regimes.*

   在上述运作下，阴阳 Y^-Y^+ 交替宫位过程的纠缠，可以形成一个连续反应链，从而，产生每一个目标域。

The field evolutions have their symmetric constituents with or without singularity. The underlying laws of the dynamic force reactions are invariant at both of the creative transformation and the reproductive generations, shown by the empirical examples:

场演化过程有其对称性成分，有无奇点。动态力反作用的基本规律在创造性转化和盛生性繁衍中都具有恒定不变量，由经验性例子表明如下：

a. *At the second horizon, the elementary particles mediate the weak interaction, similar to the massless photon that interferes the electromagnetic interaction of gauge invariance. The Weinberg–Salam theory, for example, predicts that, at lower energies, there emerges the photon and the massive W and Z bosons. Apparently, fermions develop from the energy to mass consistently as the creation of the evolutionary* *process that emerges massive bosons and follows up the animation or companion of electrons or positrons in the SU(3) horizon.*

在第二层界，基本粒子衍生弱相互作用，类似于无质量光子干扰，具有规范不变性的电磁相互作用。例如，温伯格-萨拉姆理论预测，在较低能量下，会出现光子和大量的*W*和*Z*玻色子。显然，费米子从能量到质量的发展过程是连贯性的，它产生了大量的玻色子，并伴随着 *SU(3)* 层界中的电子或正电子的生态和类同族群。

b. *At the third horizon, the strong nuclear force holds most ordinary matter together, because, for example, it confines quarks into composite hadron particles such as the proton and neutron, or binds neutrons and protons to produce atomic nuclei. During the reactive animations, the strong force inherently has such a high strength that it can produce new massive particles. If hadrons are struck by high-energy particles, they give rise to new hadrons instead of emitting freely moving radiation. Known as the classical color confinement, this property of the strong force is the reproduction of the explicit evolutionary process that produces massive hadron particles.*

在第三个层界，强核力将大多数普通物质聚集在一起，例如，它将夸克限制在复合强子粒子 *(*如质子和中子*)* 中，或者结合中子和质子产生原子核。在反应链的衍生中，强力量本身就具有如此高的强度，以至于可以产生新的大质量粒子。如果强子被高能粒子击中，它们就会产生新的强子，而不是发射自由移动的辐射。经典物理称其为颜色限制，这种强力的特性是显式进化过程的再现，它产生了大量的强子粒子。

Normally, forces are composited of three correlatives: weaker forces of the off-diagonal matrix, stronger forces of the diagonal matrix, and coupling forces between the horizons. To bring together the original potentials and to acquire the root cause of the four known forces beyond the single variations of the *Lagrangian*, the entangling states in a set of *Lagrangians* (8.2.7-13) establish apparently the foundation to orchestrate triplets into the field interactions between the $Y^{-}Y^{+}$ double streaming among the bond confinement of triplet particles. Coupling with the techniques of the

Implicit Evolution, Explicit Breaking and *Gauge Invariance*, the four universal fields (3.8.10, 2.8.21) embed the ground foundations and emerge the evolutionary intrinsics of field interactions for the weak and strong forces. Together, *field breaking* and its associated *Invariance* contributes to a part of *Horizon Evolutions*.

通常，力是由三个相关因素构成的：非对角矩阵的弱力，对角矩阵的强力，以及层间的耦合力。为了将原始势气场聚集起来，并获得四种已知力，其根本要素不仅仅是单一的拉格朗日变化，而是一组拉格朗日 (8.2.7-13) 的混合纠缠态；在三态粒子键的约束下，为阴阳 (Y^-Y^+) 双流之间的场相互作用奠定了基础。四个宇宙场 (3.8.10，2.8.21) 相结合的隐性演化、显性破缺和规范不变性等技术，奠定了力场的基本原理，并呈现出弱、强力场相互作用的演化本质。场破缺及其相关的不变性，是共同促成了层界演化的一个组成部分。

7. 强力理论 Theory of Strong Forces

Operating on the states of various types of particles, the creation process embodies an energy enclave acquiring mass from the quantum oscillator system; meanwhile, it unfolds the hyperspherical coordinates to expose its extra degree of freedom in ambient spacetime. In a similar fashion, the annihilation operates a concealment of an energy enclave back to the oscillator system of the world planes.

在对各类粒子状态进行操作时，创生过程体现了一个从量子振子系统获得质量的能量飞地；同时，它展开了超球坐标，呈现了它在时空环境中的额外自由度。同样，也以类似的方式，湮灭操作隐藏了一个能量飞地化归世界平面的振子系统。

G*iving rise to* the horizon *SU*(3), the processes of mass acquisition and annihilation function as and evolve into a sequential processes of the energy enclave as the strong mass forces in the double streaming of triple entangling procedures (Figure 8.1.1), known as a chain of reactions:

在产生层界 *SU*(3) 的过程中，质量获取功能和湮没演化是一个作为能量飞地的序列性过程，表现为双重隐螺流和三旋显纠缠步骤中形成的强质量力 (图8.1.1)，被称为连锁反应链：

1. *At the second horizon SU(2) under the gauge invariance, the gauge symmetry incepts the evolutionary actions implicitly:*
   在第二层界 *SU(2)* 的规范不变性下，规范对称隐含地激发了开源行为：
   $$D_\nu = \partial_\nu + i\sqrt{\lambda_2/\lambda_0}\phi_c^-, \qquad D^\nu = \partial^\nu - i\sqrt{\lambda_2/\lambda_0}\varphi_a^+ \qquad (8.7.1)$$
2. *Extending into the third horizon, the mass acquisition (4.12.6) is proportional to* $m\omega/\hbar$ *during the potential breaking, spontaneously:*
   扩展到第三层界时， 自发的质量捕获 *(4.12.6)* 与场破缺期间的 $m\omega/\hbar = \dfrac{mc}{\hbar\lambda}$ 成正比：
   $$\Phi_n^+ \mapsto \varphi_b^+ - \sqrt{\lambda_0}D^\nu\varphi_c^+/m^+, \ \ \Phi_n^- \mapsto \phi_a^- + \sqrt{\lambda_0}D_\nu\phi_b^-/m^- \qquad (8.7.2)$$

Therefore, the potentials (5.4.3) of the SU(1) actions result in a form of Lagrangian forces at SU(2):

因此， *SU(1)* 势气场*(5.4.3)* 的作用，在 *SU(2)* 处产生一种拉格朗日力：

$$\mathscr{L}_{Force}^{SU1} \mapsto \mathscr{L}_{ST}^{SU2} \;\rightarrow\; \Phi_n^+\Phi_n^- \mapsto \lambda_0 D^\nu \varphi_b^+ D_\nu \phi_a^- - m^+m^-\varphi_c^+\phi_b^- \qquad (8.7.3)$$

3. *Combining the above evolutionary breaking, the interruption force is further emerged into a rotational SO(3) regime:*

   基于结合上述破缺演化，相互作用力进一步衍生旋转 *SO(3)* 域：

$$\mathscr{L}_{ST}^{SU3} = \kappa_f\Big(\lambda_0(\partial^\nu\varphi_b^+)(\partial_\nu\phi_a^-) - m^+m^-\phi_{bc}^2 + \lambda_2\phi_{bc}^2\phi_{ca}^2\Big) \qquad (8.7.4)$$

where κ_f or λ_i is a constant. The $\phi_{bc}^2 = \phi_b^-\varphi_c^+$ or $\phi_{ca}^2 = \phi_c^-\varphi_a^+$ is the breaking or evolutionary fields of density.

其中，κ_f 或 λ_i 是常数。$\phi_{bc}^2 = \phi_b^-\varphi_c^+$ 或 $\phi_{ca}^2 = \phi_c^-\varphi_a^+$ 是破缺演化场的密度。

4. *With the gauge invariance among the particle fields $\phi_n \mapsto (v + \phi_b^+ + i\phi_a^-)\big/\sqrt{2}$, this strong force can be eventually developed into Yukawa interaction, introduced in 1935, and Higgs field, theorized in 1964.*

   由于粒子场 $\phi_n \mapsto (v + \phi_b^+ + i\phi_a^-)\big/\sqrt{2}$ 之间的规范不变性，这种强力最终可以发展为 *Yukawa* 于*1935*年引入的相互作用，以及 *Higgs* 于*1964*年给出的场理论。

In summary, a weak force interruption between quarks becomes the inceptive fabricator, which evolves into the horizon dynamics of triplet quarks embodied into a oneness of the mass enclave, emerging as the strong forces, observable at the collapsed states of the diagonal matrix external to its physical massive interruption. For example, a strong interaction between triplet-quarks and gluons with symmetry group *SU(3)* makes up composite hadrons such as the proton, neutron and pion.

概括地说，夸克之间的弱力相互作用形成了开源机制，它演变成三态夸克组成一个整体质量包体的层界动力学，形成强力，可观察到在其物理大质量相互作用之外的对角矩阵的塌缩状态。例如，对称群 *SU*(3) 的三态夸克和胶子之间的强相互作用构成了质子、中子和 π 介子等复合强子。

Since the coupling $\mathscr{L}_C$ between the horizons is also extendable to the strong forces, the total force at the third horizon become the following:

由于层界之间的耦合 $\mathscr{L}_C$ 也可扩展为强力，第三层界的总作用强力为：

$$\mathscr{L}_{Force}^{SU3} = \mathscr{L}_{QCD}(\chi) + \mathscr{L}_{ST}^{SU3} + \mathscr{L}_C(\chi) + \mathscr{L}_M(\chi) \tag{8.7.5}$$

$$\mathscr{L}_C(\chi) = \frac{e}{2\hbar}\left\langle \chi_\nu A_\nu \chi^\mu F_{\mu\nu}^+, \chi^\mu A^\mu \chi_\nu F_{\nu\mu}^- \right\rangle_{jk}^- \tag{8.7.6}$$

$$\mathscr{L}_M(\chi) = \frac{i}{2}\left[\partial^\nu(\chi_\nu F_{\nu\mu}^-), \partial_\mu(\chi^\mu F_{\mu\nu}^+)\right]_{jk}^- - \frac{1}{4}\left(\chi^\nu F_{\nu\mu}^+\right)_j\left(\chi_\mu F_{\mu\nu}^-\right)_k \tag{8.7.7}$$

As a part of the creation processes for the inception of the physical horizons, the potentials start to enclave energies, acquire their masses and emerge the torque forces at *r*-dependency. Besides, it develops the *SU(3)* gauge group obtained by taking the triple-color charge to refine a local symmetry. Since the torque forces generate gravitation, singularity emerges at the full physical horizon at *SU*(3) regime and beyond, arisen primarily by the extra two-dimensional freedom of the rotational coordinates.

作为创造各物态层界开源过程的一个部分，势气场开创了能量飞地，从而获得它们的质量，并以依赖于 r 的方式出现转矩力。此外，还发展成了用三色荷性来细化局部对称性的 *SU(3)* 规范群。由于转矩力产生引力，在 *SU*(3) 区域和更高物理层界出现奇异点，这个 r-奇点 主要是由于额外二维自由度的旋转坐标所引起的。

8. 本体演化场 Fields of Ontological Evolutions

For entanglement between $Y^{-}Y^{+}$ manifolds, considering the parallel transport of a *Scalar* density of the fields $\rho=\psi^{+}\psi^{-}$ around an infinitesimal parallelogram. The chain of these reactions can be interpreted by the commutation framework integrated with the gauge potential or *Physical Ontology*. At the third horizon for asymmetric dynamics, the ontological expressions (7.4.1-2) have the gauge derivatives:

对于阴阳 ($Y^{-}Y^{+}$) 流形之间的纠缠，考虑标量密度场 $\rho=\psi^{+}\psi^{-}$ 在无穷小平行四边形周围的平行传输中形成反应链，它可以在物态本体学中，用交换对易框架结合规范场来解释。在第三个层界的协称动态学，本体论表达式 (7.4.1-2) 具有规范导数：

$$\check{\partial}_{\lambda}\check{\partial}_{\lambda}\psi^{-} = \dot{x}_{m}\left(D_{m} - \overset{-}{\Gamma}{}^{s}_{nm}\right)\dot{x}_{s}D_{s}\psi^{-} \qquad : D_{\nu} = \partial_{\nu} + i\Theta_{\nu} \qquad (8.8.1)$$

$$\hat{\partial}^{\lambda}\hat{\partial}^{\lambda}\psi^{+} = \dot{x}^{\nu}\left(D^{\nu} - \overset{+}{\Gamma}{}^{\sigma}_{m\nu}\right)\dot{x}^{\sigma}D^{\sigma}\psi^{+} \qquad : D^{\nu} = \partial^{\nu} - i\Theta^{\nu} \qquad (8.8.2)$$

where the Y^{-} and Y^{+} superphase fields are defined by:

其中， 阳势和阴气的宫位场，由以下定义：

$$\Theta^{\nu} = \frac{e}{\hbar}A^{\nu}, \qquad \Theta_{\nu} = \frac{e}{\hbar}A_{\nu} \qquad (8.8.3)$$

Similar to derive the equation (7.5.1), this gauge entanglement consists of a set of the unique superphase fields, illustrated by the evolutionary components of the entangling commutators:

与推导方程 (7.5.1) 类似，这种规范纠缠是由一组独特的宫位场组成，可以由对易子缠绕的演化成分来阐明：

$$\left[\hat{\partial}^{\lambda}\hat{\partial}^{\lambda}, \check{\partial}_{\lambda}\check{\partial}_{\lambda}\right]^{+}_{\nu} = \dot{x}^{\nu}\dot{x}^{m}\left(P^{+}_{\nu\mu} + G^{+\sigma s}_{m\nu} + \Theta^{+\sigma s}_{\nu m}\right) \qquad (8.8.4)$$

$$P^{+}_{\nu\mu} \equiv \frac{1}{\dot{x}^{\nu}\dot{x}^{m}}\left[(\dot{x}^{\nu}\partial^{\nu})(\dot{x}^{m}\partial^{m}), (\dot{x}_{\nu}\partial_{\nu})(\dot{x}_{m}\partial_{m})\right]^{+}_{s} = \frac{R}{2}g^{\nu m} \qquad (8.8.5)$$

$$G^{\pm\sigma s}_{m\nu} = \mp\frac{1}{\dot{x}^{\nu}\dot{x}^{m}}\left[\dot{x}^{\nu}\overset{+}{\Gamma}{}^{\sigma}_{m\nu}\dot{x}^{\sigma}\partial^{\sigma}, \dot{x}_{m}\overset{-}{\Gamma}{}^{s}_{nm}\dot{x}_{s}\partial_{s}\right]^{\pm}_{s} \qquad (8.8.6)$$

$$\Theta_{\nu m}^{\pm\sigma s} = i\Xi_{\nu m}^{\pm} + i\frac{e}{\hbar}F_{\nu m}^{\pm} - i\eth_{m\nu}^{\pm s\sigma} - Ⓢ_{\nu m}^{\pm} \tag{8.8.7}$$

$$\Xi_{\nu m}^{\pm} = \mp\frac{1}{\dot{x}^{\nu}\dot{x}^{m}}\left[\dot{x}^{\nu}\Theta^{\nu}\dot{x}^{m}\partial^{m}, \dot{x}_{m}\Theta_{m}\dot{x}_{\nu}\partial_{\nu}\right]_{s}^{\pm} \tag{8.8.8}$$

$$F_{\nu m}^{\pm} = \pm\frac{\hbar}{e}\frac{1}{\dot{x}^{\nu}\dot{x}^{m}}\left[\dot{x}^{\nu}\partial^{\nu}(\dot{x}^{m}\Theta^{m}), \dot{x}_{m}\partial_{m}(\dot{x}_{\nu}\Theta_{\nu})\right]_{s}^{\pm} \tag{8.8.9}$$

$$\eth_{m\nu}^{\pm s\sigma} = \pm\frac{1}{\dot{x}^{\nu}\dot{x}^{m}}\left[\dot{x}^{m}\overset{+}{\Gamma}{}_{\nu m}^{\sigma}\dot{x}^{\sigma}\Theta^{\sigma}, \dot{x}_{m}\overset{-}{\Gamma}{}_{m\nu}^{s}\dot{x}_{s}\Theta_{s}\right]_{s}^{\pm} \tag{8.8.10}$$

$$Ⓢ_{\nu m}^{\pm} = \pm\frac{1}{\dot{x}^{\nu}\dot{x}^{m}}\left[\dot{x}^{\nu}\Theta^{\nu}\dot{x}^{m}\Theta^{m}, \dot{x}_{m}\Theta_{m}\dot{x}_{\nu}\Theta_{\nu}\right]_{s}^{\pm} \tag{8.8.11}$$

The *Ricci* curvature R is defined on a pseudo-*Riemannian* manifold as the trace of the *Riemann* curvature tensors. The $G_{m\nu}^{\pm s\sigma}$ tensors are the *Connection Torsions*, the rotational stress of the transportations. The $\Xi_{\nu m}^{\pm}$ are the *Superpose Torsions*, the superphase stress of the transportations. The $F_{\nu\mu}^{\pm}$ are the skew-symmetric or antisymmetric fields, the quantum potentials of the superphase energy. The $\eth_{m\nu}^{\pm s\sigma}$ are the superphase contorsion, the superposed commutation of entanglements. The $Ⓢ_{\nu m}^{\pm}$ are *Entangling Connectors,* the commutation of the superphase energy. Apparently, the superphase operations Θ^{ν} and Θ_{m} as actors lie at the heart of the ontological framework for the life entanglements.

定义在伪黎曼 (pseudo-Riemannian) 流形上的里奇 (Ricci) 曲率 R 是用于黎曼 (Riemannian) 曲率张量的迹。$G_{m\nu}^{\pm s\sigma}$ 是连接扭转的运输旋转应力张量。$\Xi_{\nu m}^{\pm}$ 是叠加扭转矩阵，为输运过程中的宫位应力。$F_{\nu\mu}^{\pm}$ 是偏对称或反对称场，也是宫位能量的量子势气场。$\eth_{m\nu}^{\pm s\sigma}$ 是宫位扭曲矩阵，也是纠缠的对易交换。$Ⓢ_{\nu m}^{\pm}$ 是缠结子，也是宫位能量的对易交换。显然，宫位 Θ^{ν} 和 Θ_{m} 的操作行为是生态纠缠在本体论中的核心框架。

Similar to derive the equations (7.8.5-6), the above motion dynamics of the field evolutions can be expressed straightforwardly for the asymmetric dynamics of quantum ontology,

类似于推导方程 (7.8.5-6) 式，上述场演化的运动动态学，可以直接表示量子本体论的协称动态学，

$$\frac{R}{2}g_{\nu m} + G_{\nu m}^{-\sigma s} + \Theta_{\nu m}^{-\sigma s} = \mathcal{O}_{m\nu}^{+\zeta} \quad (8.8.12)$$

$$\frac{R}{2}g^{\nu m} + G_{\nu m}^{+\sigma s} + \Theta_{\nu m}^{+\sigma s} = \mathcal{O}_{m\nu}^{-\zeta} \quad (8.8.13)$$

where the tensor $\mathcal{O}_{\nu m}^{\pm\sigma}$ is the Y^{+} or Y^{-} ontological modulators, given by (7.8.9-10). The notion of quantum evolutionary equations is intimately tied in with another aspect of general relativistic physics. Each solution of the equation encompasses the whole history of the superphase modulations at both dark-filled and matter-filled reality. It describes the state of matter and geometry everywhere at every moment of that particular universe. Due to its general covariance combined with the gauge fixing, this *Evolutionary Field Equation* is sufficient by itself to determine the state evolution of the metric tensor and of the universe over time. This is done in "1+1+2" formulations, where the world plane of one time-dimension and one spatial-dimension is split into the extra space dimensions during horizon evolutions. The best-known example is the classic ADM formula, the decompositions of which show that the evolutionary spacetime equations of general relativity are well-behaved: solutions always exist, and are uniquely defined, once suitable initial conditions have been specified.

其中，$\mathcal{O}_{\nu m}^{\pm\sigma}$ 是阳或阴本体论调制张量，由 (7.8.9-10) 给出。量子演化方程的概念与另一个物理学广义相对论方面有密切相关，方程的每一个解都包含着在充满暗物质和现实物质中的宫位调制的整个过程，它们描述了宇宙中每一时刻的各个物质状态和各种几何结构。由于它的一般协方差与规范定固相结合，这个演化场方程本身就足以确定度规张量和宇宙随时间的状态演化。这是在“1+1+2”公式中完成的，即，在层场演化过程中，一个时间维度和一个空间维度的世界平面被分割和附加额外的二个空间维度，最著名的例子是经典的 ADM 公式，它的分解表明了广义相对论的时空演化方程具有良好的结果：一旦指定了合适的初始条件，解总是存在的，并且是唯一定义的。

Since the ordinary quantum fields forms the basis of elementary particle physics, the *Ontological Evolution* is an excellent artifact describing the behaviors of microscopic particles in weak gravitational fields like those found on *Earth*. Quantum fields in curved spacetime demonstrate its evolutionary processes beyond mass acquisition in quantization itself, and general relativity in a curved background spacetime strongly influenced by the superphase modulations $\Theta_{\nu m}^{\pm\sigma s}$. Integrated with the above formalism, the dark area fluxion (5.4.4) illustrates that, besides of the dynamic curvatures, the blackhole quantum fields emit a blackbody spectrum of particles known as *Bekenstein-Hawking* radiation leading to the possibility not only that they evaporate over time, but also that it quantities a pair of gravitons for photons. As briefly mentioned above, this radiation plays an important role for the thermodynamics of blackholes.

由于普通量子场构成了基本粒子的物理基础，本体论的演化是描述微观粒子在弱引力场 (如地球上所发现的) 中，一件极致艺术品。时空弯曲中的量子场，在量子化过程中表现出超然卓越捕获质量的演化过程，时空弯曲背景中的广义相对论受到宫位调制 $\Theta_{\nu m}^{\pm\sigma s}$ 的强烈影响。与上述公式相结合，暗区流动的面积熵通量 (5.4.4) 阐明了：除了动态曲率外，黑洞量子场还发射一种称为贝肯斯坦-霍金辐射的黑体粒子光谱，这不仅导致它们随着时移蒸发，而且还可以确定光子的一对引子量。如上所述，这种辐射对黑洞热力学起着至关重要的作用。

9. 总结 Conclusions

Further in answering to modern and contemporary physics, this *Universal and Unified Field Theory* demonstrates its holistic foundations extendable and applicable to the well-known natural intrinsics of the evolutionary processes at the following remarks:

在进一步解答现代和当代物理学的问题时，这个《宇宙统一场论》展示了其整体基石，并扩展到了适用于众所周知的进化过程的自然本质，概要如下所述：

1. *As the foundation of particle physics, the process of Double Loops of Triple Entanglements is introduced that constitutes the horizon forces of Implicit Evolution and Explicit Reproduction with Gauge Invariance.*

   作为粒子物理学的基础，引入了三态纠缠的双螺三旋过程，它构成了演化层界的隐式创造和具有规范不变的显式盛生。

2. *It reveals the laws of the symmetric processes of virtual creations and physical reproductions that give rise to a synergy of the weak, strong and medium forces crossing the horizon regimes, systematically, simultaneously and symmetrically.*

   它揭示了虚态创造和实态盛生对称过程的法则，使弱、强和中等力在各层界中，系统地、同步地和对称地协同运作。

3. *The theory is further and fully illustrated by the artifacts of Yang-Mills actions, Quantum Chromodynamics and the weak and strong forces of the Standard Model.*

   本理论进一步由杨-米尔斯作用量、量子色动力学和标准模型的弱力和强力理论完善地证明了。

4. *General infrastructure of Field Evolutions is derived and unified by a set of generic field equations in the forms of Lagrangians (8.2.7-13) rising from the Universal Fields (3.8.10, 3.8.21).*

演化场的基础架构是导出和统一了从一组宇宙场 *(3.8.10*，*3.8.21)* 中产生的拉格朗日 *(8.2.7-13)* 表达方式，构成了普遍场方程组。

5. *Finally, Quantum Ontology integrates general relativity, quantum curvature, and gravitational fields seamlessly together.*

   最后，量子本体论将广义相对论、量子曲率和引力场无缝地结合在一起。

Conclusively, this manuscript represents the *Universal and Unified Physics* as a holistic theory to include, but not be limited to, the topological infrastructure, horizon framework, superphase operations, loop evolutions, quantum ontology, cosmological dynamics, and beyond.

毫无疑问，这篇手稿《宇宙统一物理学》代表了作为一个完整性理论，包含了 (且不局限于) 拓扑架构，层界框架，宫位操作，循环演化，量子本体，宇宙动态，以及其它的未来超越。

Nature is systematically composed of building blocks, dualities, which take on an abstract form as simple as Yin and Yang, and as sophisticated as Virtual and Physical existence. Everywhere our world shines with a beautiful nature. In every fraction of every creature, we shall find the principles and laws of physics, biology, ontology, information technology, and all other sciences. Our ancestors discovered that duality orchestrated and harmonized their reality since 5000 years ago. This outlines our missions as our human development in this universal and unified field theory:

自然界是由框架结构形成的二象性系统，可以简单地由太极阴阳概念来表述，可以精密地由虚态和实态来表述。我们的世界处处闪耀着美丽的自然现象。在每一个生物的任何部分，我们都会发现物理学、生物学、本体学、信息技术学和所有其它科学的原理和规律。早在5000年前，我们的祖先就发现了二象性存在于精妙和协的现实生活中。本章概述了《宇宙统一场论》中，作为我们人类发展的一些使命：

1. *Unified Fields - superseding and imposing an integrity of all modern and empirical models of sciences to include, but not limited to, relativity, quantum, light, electromagnetism, graviton, gravitation, thermodynamics, cosmology, and others.*

统一场 - 完善、取代和超越当代科学理论的相对论、量子、光、电磁学、引子、引力、热力学、宇宙学等所有经验模型。

2. *Universal Theory - evolving and prevailing a generality of all ubiquitous laws of topology, event, duality, horizon, conservation, continuity, symmetry, asymmetry, entanglement, and beyond.*

   宇宙理论 - 演化和普及所有无所不在的普遍规律，拓扑性、事件性、二象性、层界性、守恒性、连续性、对称性、协称性、纠缠性等的超越性概念。

Visualized in the highlights, this chapter collects the essential functions under ontology as the overview comparisons and promotions for the classical, modern sciences towards our universal field theories.

本章以亮点形象化的形式，对古典、现代、普适场理论的基本功能，在我们本体学上进行了概括和提升。

1. 物理学大统一

伟大始祖早在5千年前就给我们指明了能量本性原理：一阴一阳谓之道，二气相感而成体。

宇宙世界是由阴阳拓扑的一对流形所构成的，每个流形有着其独特的象度和维度，表征着各自的核心特征，并可组成任意复杂形态，从而演化自然事件，确定系统操作方案，执行自然法则。这些事件作为历史或未来世界的共轭点，以生生不息的相对变换表现出来：通过阴变化和阳变化为事件 λ 点的集合，显示宇宙线在连续平滑的坐标系中。在我们的宇宙中，每个世界间的范围和边界由共轭二象性组成：定义为虚态阳优势 $\psi_n^+(\lambda, \hat{\partial})$ 场和实态阴优气 $\psi_n^-(\lambda, \check{\partial})$ 场，二气相感导致事态的盛生繁衍或消亡化归，在双向动态转换的异态世界循环过程中，一方面从属于虚态世界的宫位特性，另一方面也受制于实态世界的时空运动，其数学原理为:

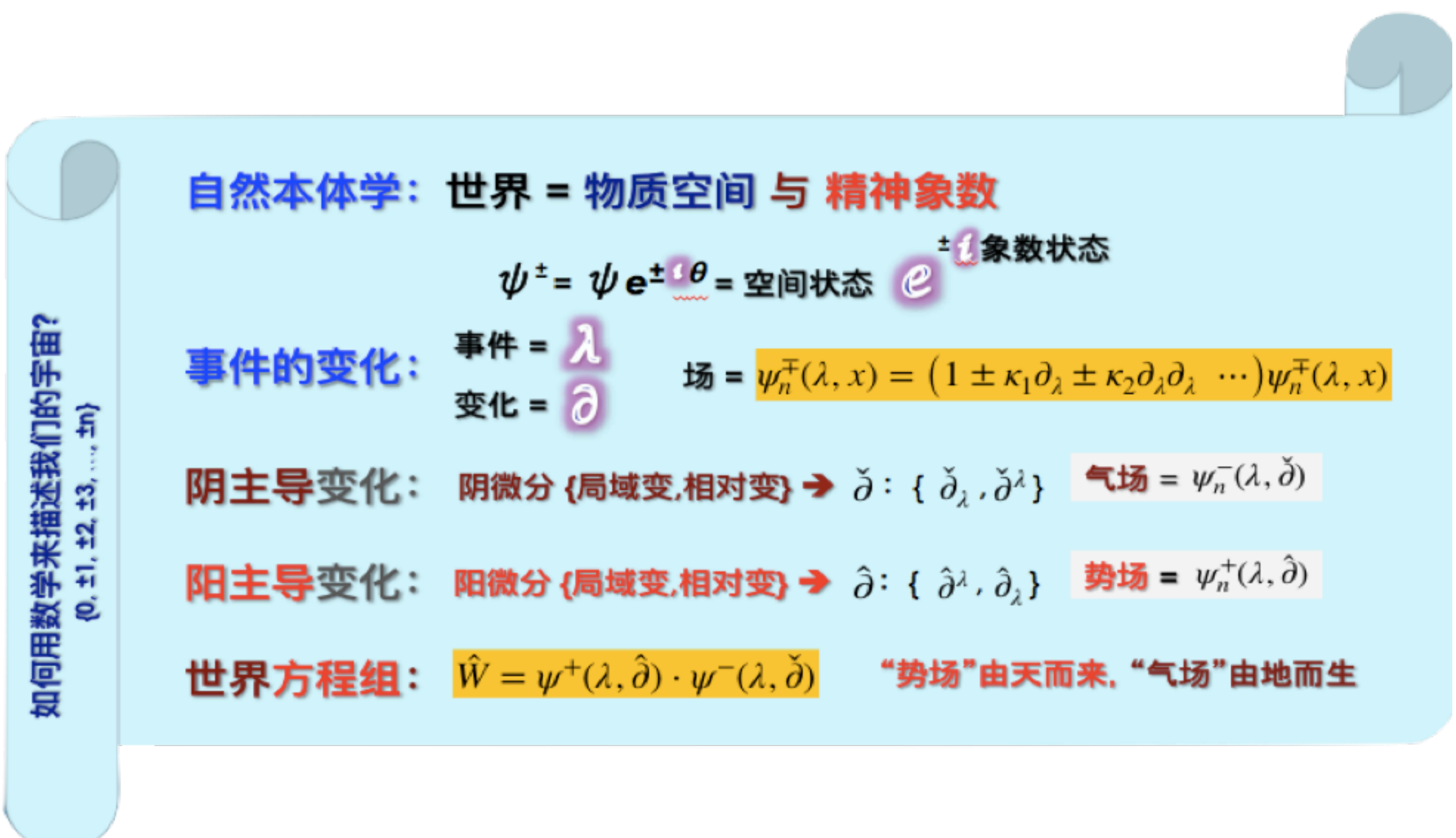


图 *9.1.1:* 自然科学的数学原理

定义太极阴阳组成的最小单位为：能量子，她可以用数学来表达，其自然本性特征，表现为能量的四大基本法则：“二象性，互动性，拓扑性，调制性”，由此演化而形成整个《物理学大统一》，也是描写物态运动规律的基本原理和法则。如图所示：

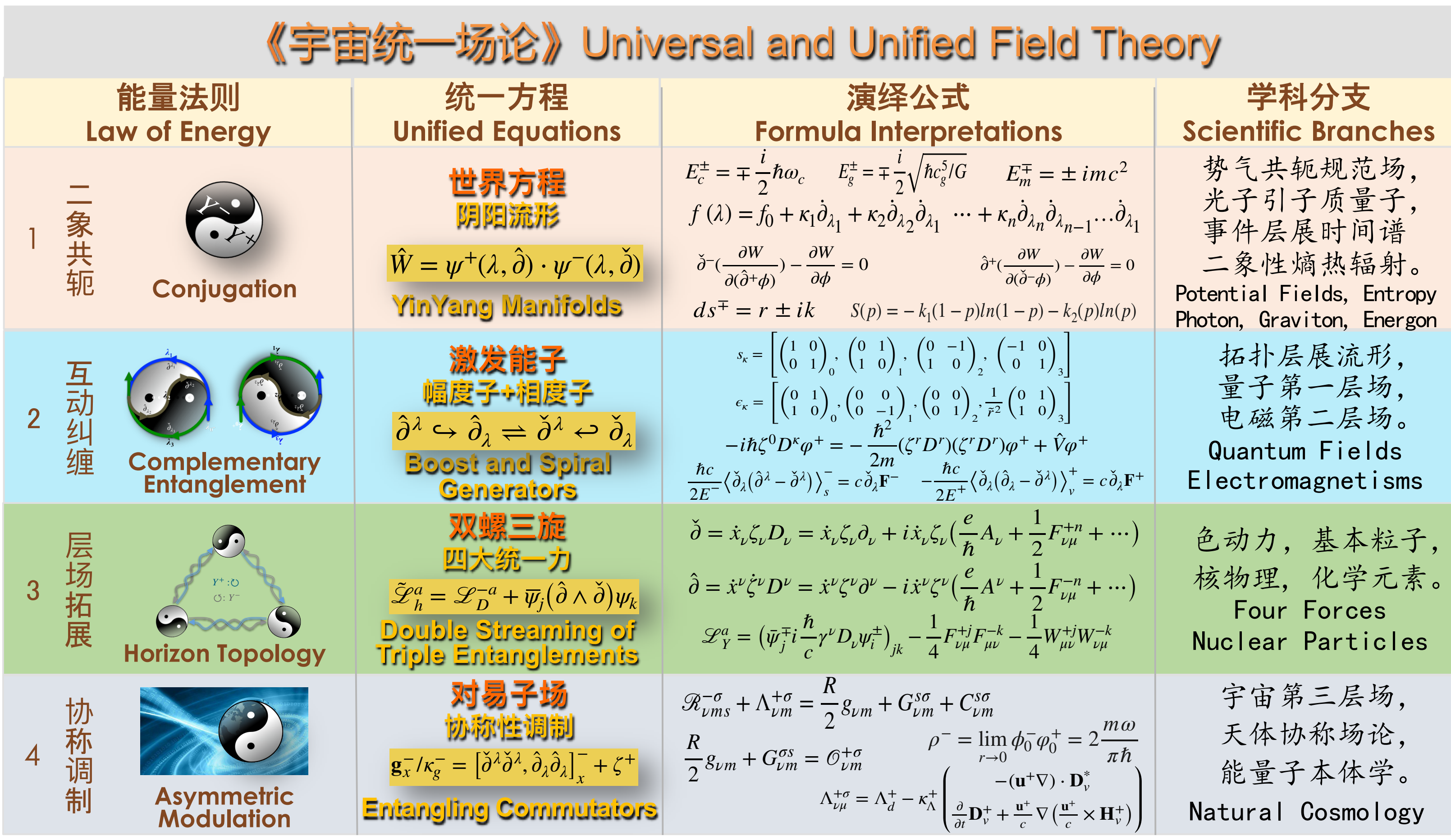


图2：《物理学大统一》原理

这个演化过程为一个简要明了的三部曲：从一个阴阳共轭动态，到二对阴阳纠缠运行，到三对阴阳层场拓扑，乃至阴阳调制的自然界基本法则：周而复始，循展激发，拓扑渐进，生生不息。由此，呈现了我们赖以生存的物质世界，大道至简而无不简；由以下各节，略作逐步解析。

命题认证：

1. 能量状态性：能量虚态必须以虚数“*i*”为数理的共轭标识，纠正经典能质方程的缺陷。

2. 规范不变性：虚态宫位优势和实态幅位优势的“二象性”原理，给出经典规范场理论。
3. 层场拓扑性：“时间”是虚态事件过程中的宏观状态标量，演化世界平面到四维流形。

2. 能量子本体理论

阴阳的互动纠缠性奠定了能量子激发态的数理统一方程式：$\hat{\partial}^{\lambda} \circlearrowleft \hat{\partial}_{\lambda} \rightleftharpoons \check{\partial}^{\lambda} \circlearrowright \check{\partial}_{\lambda}$，从而给出了廓览量化性幅度促进子和相度扭旋子方程式：

$\hat{\partial}^{\lambda} = \dot{x}^{m} S_2^{+} \partial^{\nu}$	$S_2^{+} = \frac{\partial x^{\nu}}{\partial x^{m}} = \begin{pmatrix} 1 & -i \\ i & 1 \end{pmatrix} \equiv s_0 + i s_2$	$\hat{\partial}^{\lambda} = \dot{x}^{m} R_2^{+} \partial^{\nu}$	$R_2^{+} = x^{\mu} \Gamma^{+}_{\nu\mu a} = x^{\mu} \begin{pmatrix} 0 & \tilde{r} \\ \tilde{r} & -\tilde{r} \end{pmatrix} \equiv \tilde{r}^2 \epsilon_0 + i \epsilon_2 \tilde{r} \tilde{\vartheta}$
$\hat{\partial}_{\lambda} = \dot{x}_{m} S_1^{+} \partial^{\nu}$	$S_1^{+} = \frac{\partial x^{\nu}}{\partial x_{m}} = \begin{pmatrix} -1 & -i \\ -i & 1 \end{pmatrix} \equiv s_3 - i s_1$	$\hat{\partial}_{\lambda} = \dot{x}_{m} R_1^{+} \partial^{\nu}$	$R_1^{+} = x^{\mu} \Gamma^{+\nu}_{\mu a} = x^{\mu} \begin{pmatrix} 0 & 1/\tilde{r} \\ 1/\tilde{r} & -\tilde{r} \end{pmatrix} \equiv \tilde{r}^2 \epsilon_3 - i \epsilon_1 \tilde{r} \tilde{\vartheta}$
$\check{\partial}^{\lambda} = \dot{x}^{\nu} S_1^{-} \partial_{m}$	$S_1^{-} = \frac{\partial x_{m}}{\partial x^{\nu}} = \begin{pmatrix} -1 & i \\ i & 1 \end{pmatrix} \equiv s_3 + i s_1$	$\check{\partial}^{\lambda} = \dot{x}^{\nu} R_1^{-} \partial_{m}$	$R_1^{-} = x_s \Gamma^{-m}_{s\alpha} = x_s \begin{pmatrix} 0 & 1/\tilde{r} \\ 1/\tilde{r} & -\tilde{r} \end{pmatrix} \equiv \tilde{r}^2 \epsilon_3 + i \epsilon_1 \tilde{r} \tilde{\vartheta}$
$\check{\partial}_{\lambda} = \dot{x}_{\nu} S_2^{-} \partial_{m}$	$S_2^{-} = \frac{\partial x_{m}}{\partial x_{\nu}} = \begin{pmatrix} 1 & i \\ -i & 1 \end{pmatrix} \equiv s_0 - i s_2$	$\check{\partial}_{\lambda} = \dot{x}_{\nu} R_2^{-} \partial_{m}$	$R_2^{-} = x_m \Gamma^{-}_{nma} = x_m \begin{pmatrix} 0 & \tilde{r} \\ \tilde{r} & -\tilde{r} \end{pmatrix} \equiv \tilde{r}^2 \epsilon_0 - i \epsilon_2 \tilde{r} \tilde{\vartheta}$
$s_{\kappa} = \left[\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}_0, \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}_1, \begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}_2, \begin{pmatrix} -1 & 0 \\ 0 & 1 \end{pmatrix}_3 \right]$		$\epsilon_{\kappa} = \left[\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}_0, \begin{pmatrix} 0 & 0 \\ 0 & -1 \end{pmatrix}_1, \begin{pmatrix} 0 & 0 \\ 0 & 1 \end{pmatrix}_2, \frac{1}{\tilde{r}^2} \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}_3 \right]$	

图 9.2.1： 能量子激发态：幅度促进子和相度扭旋子方程式

这里，幅度促进子激发的是光子，相度扭旋子激发的是引子，她们的动态纠缠性矩阵结构，给出了ζ-激发子，其中包含了著名的泡利矩阵，组成伽马矩阵，如下：

$$\zeta^{\nu} = \gamma^{\nu} + \chi^{\nu} \qquad \zeta_{\nu} = \gamma_{\nu} + \chi_{\nu}$$

$$\gamma^{\nu} = \left[\begin{pmatrix} \sigma_0 & 0 \\ 0 & -\sigma_0 \end{pmatrix}_0, \begin{pmatrix} 0 & \sigma_1 \\ -\sigma_1 & 0 \end{pmatrix}_1, \begin{pmatrix} 0 & \sigma_2 \\ -\sigma_2 & 0 \end{pmatrix}_2, \begin{pmatrix} 0 & \sigma_3 \\ -\sigma_3 & 0 \end{pmatrix}_3 \right]$$

$$\chi^{\nu} = \left[\begin{pmatrix} \varsigma_0 & 0 \\ 0 & -\varsigma_0 \end{pmatrix}_0, \begin{pmatrix} 0 & \varsigma_1 \\ -\varsigma_1 & 0 \end{pmatrix}_1, \begin{pmatrix} 0 & \varsigma_2 \\ -\varsigma_2 & 0 \end{pmatrix}_2, \begin{pmatrix} 0 & \varsigma_3 \\ -\varsigma_3 & 0 \end{pmatrix}_3 \right]$$

$\sigma_0 = s_0$	$\sigma_1 = s_1$	$\sigma_2 = i s_2$	$\sigma_3 = -s_3$
$\varsigma_0 = \tilde{r}^2 \epsilon_0$	$\varsigma_1 = \tilde{r} \tilde{\vartheta} \epsilon_1$	$\varsigma_2 = i \tilde{r} \tilde{\vartheta} \epsilon_2$	$\varsigma_3 = \tilde{r}^2 \epsilon_3$

图 9.2.2： 能量ζ-激发子：光子+引子矩阵

众所周知，自然而然的生态是一个循序渐进的拓朴架构过程，形成生生不息的阴阳生态演化系统。宇宙拓扑场的阴阳二象性，在架构设计上定义了层场拓展系统的如下场域范畴和概念：

1. 势气层场域(虚态)：基础标量性状态场 ψ_n^+ 和 ψ_n^-，U(0)
2. 第一层场域(虚态)：世界平面热密度场 $\rho^\pm = \psi_n^\pm \varphi^\mp$，U(1)
3. 第二层场域(异态)：连续和交互通量场 $\mathbf{f}^\pm = \partial \rho_n^\pm$，SU(2)×U(1)
4. 第三层场域(物态)：时空流形加速力场 $\mathbf{g}^\pm = \partial \mathbf{f}_n^\pm$，SU(3)×SU(2)×U(1)
5. 第四层场域(物态)：连续和交互加速场 $\mathbf{G}^\pm = \partial \mathbf{g}_n^\pm$，宇宙星系

简而化之，在本体学中，运用时间作为自然操作的渐进演化过程，可以有数理逻辑关系的图示操作，形成势场 ψ_n^+ 和气场 ψ_n^- 纠缠的方程组：

$$\hat{W}_n = \psi_n^+(\lambda, \hat{x})\psi_n^-(\lambda, \check{x}) \qquad \lambda = \pm ict$$

$$\psi_n^\mp(\lambda, x) = \left(1 \pm \tilde{\kappa}_1 \dot{\partial}_{\lambda_1} \pm \tilde{\kappa}_2 \dot{\partial}_{\lambda_2} \dot{\partial}_{\lambda_1} \quad \cdots\right) \psi_n^\mp(\lambda, x)\big|_{\lambda=\lambda_0}$$

$$f(\lambda) = f\left(\lambda_0\right) + f'\left(\lambda_0\right)(\lambda - \lambda_0)\cdots + f^n\left(\lambda_0\right)(\lambda - \lambda_0)^n/n!$$

$$f(\lambda) = f_0 + \kappa_1 \dot{\partial}_{\lambda_1} + \kappa_2 \dot{\partial}_{\lambda_2} \dot{\partial}_{\lambda_1} \quad \cdots + \kappa_n \dot{\partial}_{\lambda_n} \dot{\partial}_{\lambda_{n-1}} \ldots \dot{\partial}_{\lambda_1}$$

$$\kappa_n = f^n\left(\lambda_0\right)/n! \qquad \lambda_i \in \{\dot{\partial}_{\lambda_i}\} = \{\check{\partial}_\lambda, \check{\partial}^\lambda, \hat{\partial}^\lambda, \hat{\partial}_\lambda\}$$

图 9.2.3：世界方程组

后面三个方程为泰勒展开原理，从而导出前面二个方程组，这就是本体学著名“世界方程组”，表征了循序渐进运动的内在本体过程，更广义地，系统的演变对於任何纠缠必须是动态平稳，从而，用变分法数学语言来表述，求导出描述正确演变的微分方程式；从哈密顿原理可以推导出类似于拉格朗日方程式，求解一个事件系统作用量的平稳值，通常给出的是一对阴阳共轭极值的动态平衡

$$\check{\partial}^-\left(\frac{\partial W}{\partial(\hat{\partial}^+\phi)}\right) - \frac{\partial W}{\partial \phi} = 0 \qquad \hat{\partial}^+\left(\frac{\partial W}{\partial(\check{\partial}^-\phi)}\right) - \frac{\partial W}{\partial \phi} = 0$$

$$\check{\partial}^- \in \{\check{\partial}_\lambda, \check{\partial}^\lambda\} \quad \hat{\partial}^+ \in \{\hat{\partial}^\lambda, \hat{\partial}_\lambda\} \quad W \in \{W^\mp\} \quad \phi \in \{\phi_n^\pm, \varphi_n^\pm\}$$

图 9.2.4：阴阳共轭运行方程式

由此，可以得到这系统随时空动态从一个阴或阳主状态演变互动到其共轭的阳或阴辅状态的二对阴阳纠缠谱：

$$
\begin{aligned}
\phi_n^+\left(\kappa_1+\kappa_2\hat{\partial}_{\lambda_3}\right)\left(\hat{\partial}_{\lambda_2}-\check{\partial}^{\lambda_2}\right)\varphi_n^- + \kappa_2\phi_n^+\left(\check{\partial}_{\lambda_3}\check{\partial}^{\lambda_2}\right)\varphi_n^- &= \phi_n^+W_n^-\varphi_n^- \\
\varphi_n^-\left(\kappa_1+\kappa_2\check{\partial}_{\lambda_3}\right)\left(\check{\partial}^{\lambda_2}-\hat{\partial}_{\lambda_2}\right)\phi_n^+ + \kappa_2\varphi_n^-\left(\hat{\partial}_{\lambda_3}\hat{\partial}_{\lambda_2}\right)\phi_n^+ &= \varphi_n^-W_n^+\phi_n^+
\end{aligned}
$$

$$
\begin{aligned}
\phi_n^-\left(\kappa_1+\kappa_2\check{\partial}^{\lambda_2}\right)\left(\check{\partial}_{\lambda_1}-\hat{\partial}^{\lambda_1}\right)\varphi_n^+ + \kappa_2\phi_n^-\left(\hat{\partial}^{\lambda_2}\hat{\partial}^{\lambda_1}\right)\varphi_n^+ &= \phi_n^-W_n^+\varphi_n^+ \\
\varphi_n^+\left(\kappa_1+\kappa_2\hat{\partial}^{\lambda_2}\right)\left(\hat{\partial}^{\lambda_1}-\check{\partial}_{\lambda_1}\right)\phi_n^- + \kappa_2\varphi_n^+\left(\check{\partial}_{\lambda_2}\check{\partial}_{\lambda_1}\right)\phi_n^- &= \varphi_n^+W_n^-\phi_n^-
\end{aligned}
$$

$$
\kappa_1=\hbar c^2/2 \qquad \kappa_2=\pm(\hbar c)^2/(2E_n^{\mp}) \qquad W_n^{\pm}=c^2E_n^{\pm}
$$

图7：第一宇宙场方程组：量子场

即：微观事件操作过程的时空演化拓扑方程。

命题认证：

4. 狄拉克方程：考虑第一和第二层场界的偶合事件时，就构成了著名的狄拉克方程。
5. 薛定諤方程：考虑第一、二和三层场界的偶合事件，就构成了著名的薛定諤方程。
6. 泡利理论和克莱因-戈尔登方程：第一宇宙场的应用，可以导出所有量子力学方程。

3. 热熵和异态辐射

在【本体科学】中，熵：是描述一个系统具有内在各群体状态性组合成的动态平衡标量，其稳定性遵守普遍原理：能量的四大法则，由此，确立该系统的整体宏观稳定性、内在微观平衡性、以及二项共轭动态性，当某个阴或阳群体部分的状态几率趋于极大时，其共轭部分必然互辅性地趋于极小，作为对该系统的某个实体测量，群体状态的各个可测量的特别性就表现为不确定性的随机统计效应，这个原理可以由如下数学方法进行推导和演绎：

一个系统的宏观态是微观动态群分布的体现，对具有包含阴阳微观虚态的系统而言，若设系统有 *N* 个微观状态，并含有三个可能状态： 阴Y^-|-〉, 阳Y^+ |+〉, 和中性 |o〉, 它们分别归纳为三种能量态 E_n^-, E_n^+ 和 E_n^o；设，该系统正负荷性数各为 $N_n^\pm$ ，则，中性加共轭数为 $N^o = N - N_n^\pm$，具有相互作用事件的能量为 $E_n = N_n^\pm E_n^\pm$，在 *N* 中选取 $N_n^\pm$ 发生的概率为 $\Omega(E_n)$，就决定了该系统的阴或阳态的熵：

$$\Omega(E) = \prod \Omega(E_n) = \prod \frac{N!}{N_n^\pm!(N - N_n^\pm)!} \qquad N_n^\pm = \frac{E_n}{|E_n^\pm|}$$

$$S(E) = \frac{1}{N}\sum_n S(E_n) = -k_B \frac{1}{N} \log \prod \Omega(E_n)$$

$$\text{斯特灵公式：} log\,(N!) = N \log(N) - N + \frac{1}{2}\log(2\pi N) + \Re(1/N)$$

$$\frac{1}{N}S(N_n^\pm) = -k_B\Big[(1 - \frac{N_n^\pm}{N})\log(1 - \frac{N_n^\pm}{N}) + \frac{N_n^\pm}{N}\log(\frac{N_n^\pm}{N})\Big]$$

$$S(p_n^\pm) = -k_B\Big[\big(1 - p_n^\pm\big)\log\big(1 - p_n^\pm\big) + p_n^\pm \log\big(p_n^\pm\big)\Big]$$

$$p_n^\pm = N_n^\pm / N$$

图 *9.3.1*：熵的共轭二项性公式

这里，阳或阴状态作用下的几率 $p_n^\pm = N_n^\pm/N$，伴随着其它中性加上对立共轭 $1 - p_n^\pm$的二项性几率，从而表明了：任何事件的每个运动过程中都包含了阴阳共轭互动的平均作用量，代表来自二项性分布或流程过程中事件和特征的稳定状态。

由此而然，事件的概率分布和每个事件的信息量构成了一个阴阳共轭的纠缠变量，这个纠缠运动的期望值，就是这个分布产生的虚实态的平衡值。物态间阴阳互动作用的熵随着该系统能量的变化，就定义了温度T:

$$\frac{1}{T} \equiv \sum_n \frac{\partial S_n}{\partial E_n} = \sum_n \frac{\mp i k_B}{E_n^{\pm}} \log\left(\frac{N E_n^{\pm}}{E_n} - 1\right)$$

$$E_n = N E_n^{\pm} h_n \qquad h_n^{\pm} = \frac{N_n^{\pm}}{N} = \frac{1}{e^{\pm \beta E_n^{\pm}} + 1} \qquad \beta = \frac{i}{k_B T}$$

图 *9.3.2*：统计温度*T*分布

并由熵的共轭二项性公式进一步给出如下：

$$\tilde{E}^{\pm} = -i \frac{d \log(Z)}{d\beta} = \pm i E_n^{\pm}\left(\frac{1}{2} + \frac{1}{e^{\pm \beta E_n^{\pm}} - 1}\right)$$

$$Z \equiv \sum_{\nu} e^{\pm \beta E_{\nu}^{\pm}} = \frac{e^{\pm \beta E_{\nu}^{\pm}/2}}{1 - e^{\pm \beta E_{\nu}^{\pm}}} \qquad E_n^{\pm} = \mp i \epsilon_n$$

图 *9.3.3*：波兹曼统计分布

犹如，时间是微观事件操作过程的宏观状态标量，温度：是物态内部能量分别对外部物态进行作用时，其共轭纠缠的一种外在状态的系统标量，也称为热态；对一个孤立物态系统而言，由于缺乏外部阴阳纠缠动能，就失去了统计的数量要求，也就没有热态温度的意义，即孤立系统不存在外部纠缠。

命题认证：

7. 费米-狄拉克统计：能量处于异态(各异态之间弱相互作用可忽略不计)时的统计规律。
8. 玻色-爱因斯坦统计分布：能量处于异态时，虚态与实态共享第二场域时的统计规律。

9. 莱因-戈尔登方程：由于纠缠过程为一对异态子，使辐射传播守恒方程增加了*4*因子。
10. 光子辐射：异态辐射的效率，暗示着，光是由三态夸克与物态转换形成的拓扑辐射。
11. 引子辐射：以黑洞贝肯斯坦-霍金的量子辐射是纯虚态熵散发的热辐射，与物态无关。

实际上，在第二层场域中，描述一组自旋为零的虚态子，辐射守恒公式代表着两对能量子为主导的势气共轭纠缠的阴阳守恒法则，其传播原理的本质是虚态交换子互辅作用的超距作用。

4. 电磁连续通量场

在物理学中，通量被分为：统计力学的热流数量和量子力学的机率通量，是分别描述热流和机率密度流动组合各层场域的标通量和矢通量，分别描述第二、第三或第四场域中的耦合现象，阴阳二象过程组成的标通量由两种组成部分：

i) 势气场连续性方程，和

ii) 交换子互辅场方程：

$$\langle\dot{\partial}\rangle^{\pm} \equiv \sum_n p_n^{\pm}\left(\varphi_n^{\mp}\dot{\partial}\phi_n^{\pm} + \phi_n^{\pm}\dot{\partial}\varphi_n^{\mp}\right) \qquad [\dot{\partial}]_v^{\mp} \equiv \sum_n p_n^{\mp}\left(\varphi_n^{\pm}\dot{\partial}\phi_n^{\mp} - \phi_n^{\mp}\dot{\partial}\varphi_n^{\pm}\right)$$

$$p_n^{\pm} = \frac{h_n^{\pm}}{\sum h_\nu} = \frac{e^{\pm\beta E_n^{\pm}}}{Z} \qquad h_n^{\pm} = \frac{N_n^{\pm}}{N} = \frac{1}{e^{\pm\beta E_n^{\pm}}+1} \qquad \beta = \frac{i}{k_B T} \qquad Z = \frac{e^{\pm\beta E_\nu^{\pm}/2}}{1-e^{\pm\beta E_\nu^{\pm}}}$$

图 *9.4.1*：流数量连续方程和交换子互辅方程

这里，符号 $\langle\dot{\partial}\rangle$ 为阴阳场的流数量连续性方程，符号 $[\dot{\partial}]$ 为交换子互辅性方程； 为统计热平衡分布概率。由此可见，状态子群孕育着虚态的统计热平衡，阴阳共轭效应组织成宏观统计的热平衡密度。将第一宇宙场的四个场方程组，用上图的流数量连续性和交换子互辅性方程式分别表达出来，便可以进一步整理而获得第二宇宙方程组：

$$\frac{\hbar c}{2E^{-}}\left\langle\check{\partial}_\lambda\left(\hat{\partial}^\lambda - \check{\partial}^\lambda\right)\right\rangle_v^{-} = \dot{\partial}_\lambda \mathbf{f}_v^{-} - \frac{c}{2}\left[\check{\partial}_\lambda - \hat{\partial}^\lambda\right]_v^{-} - \langle W_0^{-}\rangle = 0$$

$$-\frac{\hbar c}{2E^{+}}\left\langle\check{\partial}_\lambda\left(\check{\partial}^\lambda - \hat{\partial}_\lambda\right)\right\rangle_v^{+} = \dot{\partial}_\lambda \mathbf{f}_v^{+} - \frac{c}{2}\left[\hat{\partial}_\lambda - \check{\partial}^\lambda\right]_v^{+} - \langle W_0^{+}\rangle \equiv \mathbf{J}_x$$

$$\mathbf{J}_x \equiv \mathbf{J}_q^{-} - \mathbf{J}_g^{-} \qquad \mathbf{J}_q^{-} = \left\{\mathbf{u}_q\rho_q, \mathbf{J}_q\right\} \qquad \mathbf{J}_g^{-} = 4\pi G\left\{\mathbf{u}_g\rho_g, \mathbf{J}_g\right\}$$

图 *9.4.2*：第二宇宙场方程组：电磁场

由矢通量描述第三或第四场域中的宏观物理现象，投射在时空流形上，便显现出作用于物体上的通量力，该力通过施加在世界平面的物理线上，由上图表达式，转换到时空流形的电荷 q 力和质量 g 力。

命题认证：

12. 洛伦兹力方程：第二宇宙场方程组分别等价于洛伦兹电磁力和洛伦兹引力场方程。

13. 麦克斯韦方程：第二宇宙场方程组中忽略引力作用场，给出著名的电磁场方程组。

5. 四大相互作用力

事件操作过程，表征了循序渐进的内在本体宫位和时空拓扑运动过程的演化状态，也就是说，自然而然的生态是一个循序渐进的架构过程，所以她的演化过程也是层场拓展，从无形到有形，从虚态能量到实态物质，从微观事态到宏观状态，形成生生不息的生态演化系统。

力是实态对象之间场的交互传输，不是它们直接碰撞作用的瞬间效应；当一个事件引起跨越每个层场的状态域时，就会发生进化过程，其中一个重要操作过程是场循环的宫位调制，从虚态宫位制进入物态时空制世界，它们形成势在必行的互辅循环过程，称为创造或湮灭的循环场 (Loop Fields)。

由于事件起源于二维平面世界的本体场，无质量的隐形场可以对称地转换、传输和呈现物质世界中的质量子，从而扩展了额外的二维自由度；在第二个层场域中，这种事态共轭的异态演化是隐性阳态主导的弱力场，它是一个动态创生或淹灭的异态过程，直到它体现为获得全质量的能量载体，并在下一个统计热态层场域中联合成大质量系统，从而凸显出相关强核力能和引力能等。

作为自然的二象性，与其对应的是另一个称为显性阴态主导的强力场，它是一个动态复制或承生的物理过程，与源于阳隐性自然演化主导相关联，阴性显性主导的一系列再生反应，通常以序列和纠缠过程的弱电引力场，过渡到第三层场域的热动态群体，产生对称耦合的强电引力场。

作为宇宙基本法则一各关键部分，自然界中最小反应链原理是由三个粒子形成一个循环，这些粒子构成一个三联体机构，共同产生双重流动纠缠的三个运动状态，被命名为：双螺三旋。 可以由下图统一演示：

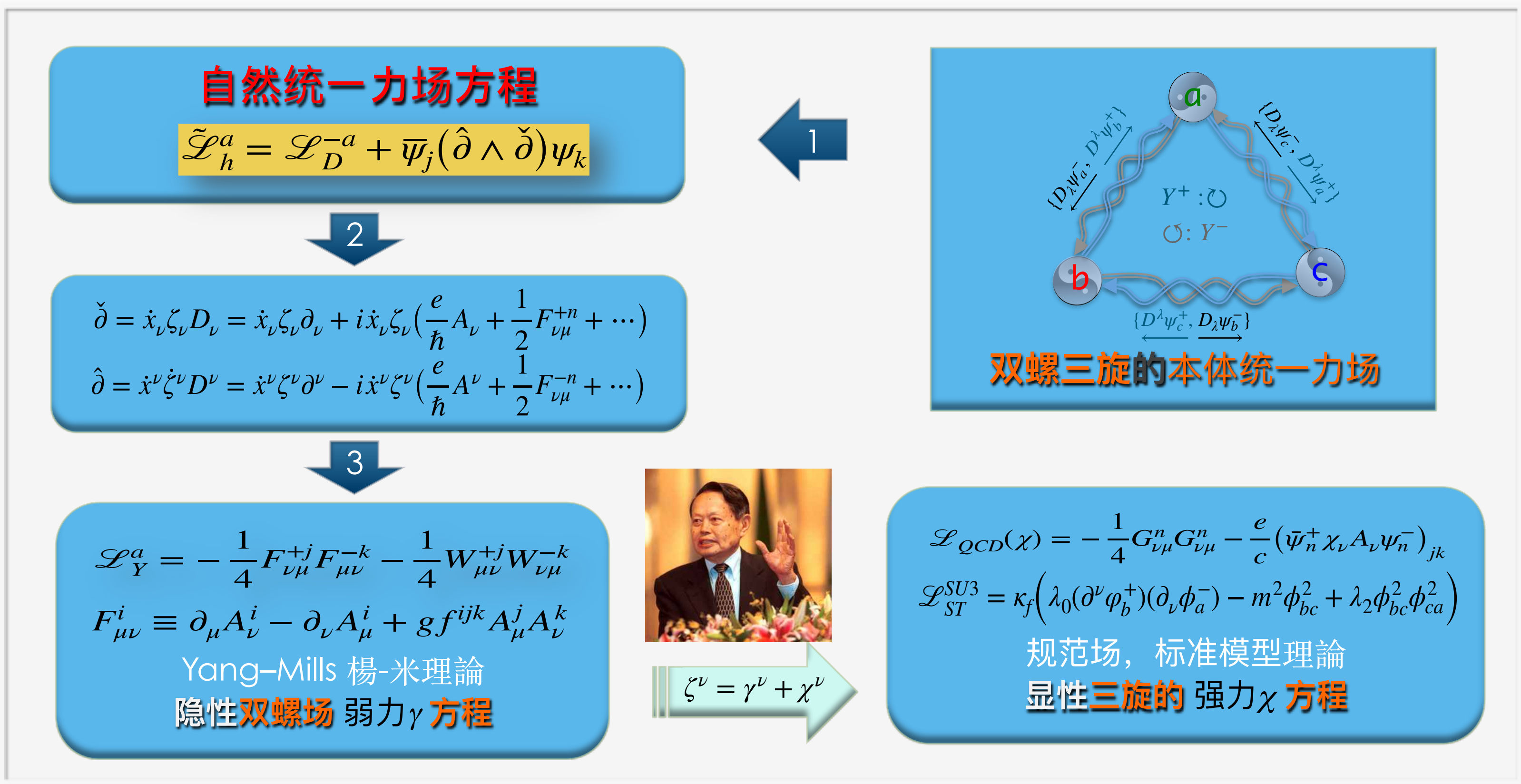


图 9.5.1：本体统一力场：双螺三旋

这里，符号 $j,k \in \{a,b,c\}$ 表示了三态粒子的极小循环链 $\wedge$ ，定义为：本体进化论的物态拓展场，廓览和统一了所有已知的弱、强、引力和电磁力，包括它们的耦合效应。

命题认证：

14. 弱力：异态能量子到质量子的渐进过程，呈现了规范不变的杨-米理论弱相互作用。
15. 密度：在第二到第三层场产生和淹没质量的谐振子过程中，呈现无奇点波粒二象性。
16. 强力：物态在第三层场域，完成了三态能量子的扭旋耦合，获得全质量强相互作用。

6. 宇宙的自然星系

宇宙中的自然二象性阴阳规律，不仅完美地展现于物态世界的对称性，而且在对称性(symmetry)和协称性(asymmetry)之间显现了更加美妙和谐的原理。由第二宇宙场对称连续性和协称交互性的二象原理，可以给出协称交互性的数学描述：第三宇宙场

$$\mathbf{g}_x^-/\kappa_g^- = \left[\check{\partial}^\lambda\check{\partial}^\lambda, \hat{\partial}_\lambda\hat{\partial}_\lambda\right]_x^- + \zeta^+ \qquad \mathbf{g}_x^+/\kappa_g^+ = \left[\check{\partial}_\lambda\check{\partial}_\lambda, \hat{\partial}^\lambda\hat{\partial}^\lambda\right]_x^+ + \zeta^-$$

$$\zeta^+ = \left(\hat{\partial}_\lambda(\check{\partial}^\lambda - \check{\partial}_\lambda)\right)_x^+ \qquad \zeta^- = \left(\hat{\partial}^\lambda(\check{\partial}^\lambda - \check{\partial}_\lambda)\right)_x^- \qquad \left(\dot{\partial}_\lambda\right)_s^\pm \equiv \sum p_n \psi_n^\pm \dot{\partial}_\lambda \psi_n^\mp \qquad \left(\dot{\partial}_\lambda\right)_V^\pm \equiv \sum p_n \psi_n^\pm \dot{\partial}_\lambda V_n^\mp$$

$$[\check{\partial}\check{\partial}, \hat{\partial}\hat{\partial}]_s^\mp \equiv \sum_n p_n^\mp \left(\varphi_n^\pm \check{\partial}\check{\partial}\phi_n^\mp - \phi_n^\mp \hat{\partial}\hat{\partial}\varphi_n^\pm\right) \qquad [\check{\partial}\check{\partial}, \hat{\partial}\hat{\partial}]_v^\mp \equiv \sum_n p_n^\mp \left(\varphi_n^\pm \check{\partial}\check{\partial} V_n^\mp - \phi_n^\mp \hat{\partial}\hat{\partial}\Lambda_n^\pm\right)$$

图 *9.6.1*：第三宇宙场方程组- 协称场

由此表明自然界拓扑层次结构的协调凝聚、渐进演化、动态事件和生生不息的宇宙生态世界。由于，宇宙事件λ演化的主导过程是在第一和第二层场域上，所以，无极形成宇宙星系核 (泰极) 时，星系的数理运行方程可以由虚实共轭的两个世界平面来阐述：

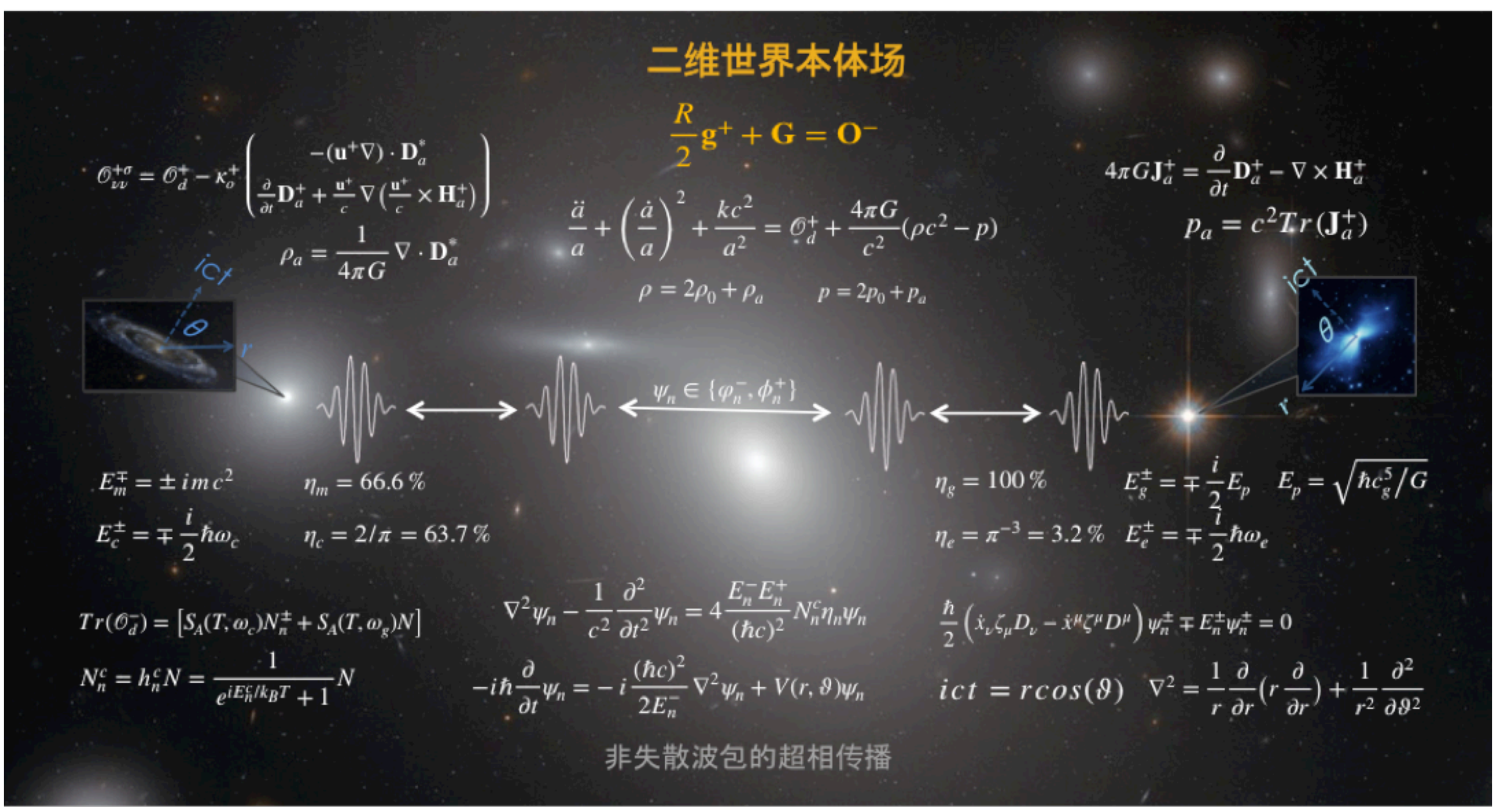


图 *9.6.2*：泰极星系的运行方程

可见，各星系（如银河系）在其特定几何曲率R的稳恒状态下，永恒地定点旋转，并通过虚态宫位进行调制操作，形成异态应力张力密度，伴随着产生暗能量的光子和引子等热力统计辐射。我们银河系的太阳，是处于第二到第三拓扑场的过度整合域，太阳系中星球和物态运动规律通常用“四维时空”的协称场来阐述，形成“拓扑演绎场”的第三域，也称为物态宇宙学：

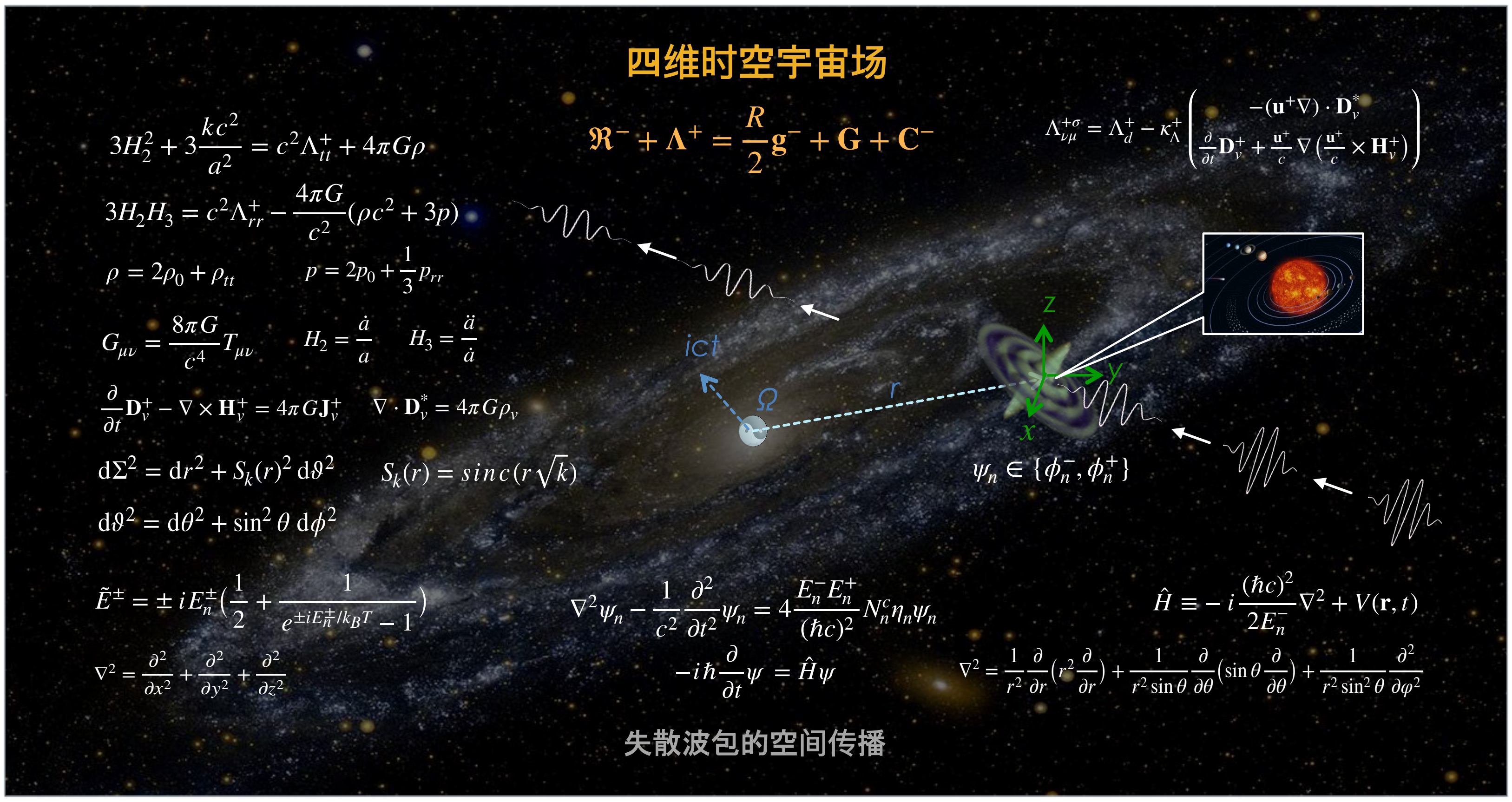


图 *9.6.3*：太极星系的运动程

在宇宙事件产生物质状态的实化过程中，宇宙异态子形成物态并获得能量廓形的同时，由物态的一维再延伸而产生二个自由旋转的附加空间，形成物理世界中的“四维时空”系统，物态世界在二维自由度下产生三维物质空间之后，以失散波包的整体传播旋转运动于空间流形，才形成了引力奇点，精妙绝伦。简而言之：人类有二维自由度，乃万变不离其宗焉。

命题认证：

17. 星系运行：世界平面上，黎曼張量的几何曲线收缩为里奇張量为零，无始无终地旋转。

18. 引力奇点：在虚态域中，星系核心遵循宫位线性迭加原理，不存在“力”的奇点概念。
19. 太系运行：广义相对论不适用于二维世界平面的星系运动，不适合于解说宇宙起源。
20. 四维时空：近代物理学只适用于物态范畴，从理论上证明了“大爆炸”假说不能成立。

7. 物理学圆满谢幕

纵揽《物理学大统一》的盛宴，自然【本体学】在哲理科学上全面展开了层场拓扑构架的“能量法则”，廓览了西方史上所有经典和当代物理学领域，如，古典力学、热力统计学、电磁场、量子力学、色动力学、弱力、强力、引力、狭义和广义相对论、天体宇宙等，有关重要定理、公式和原理，由下图概括。

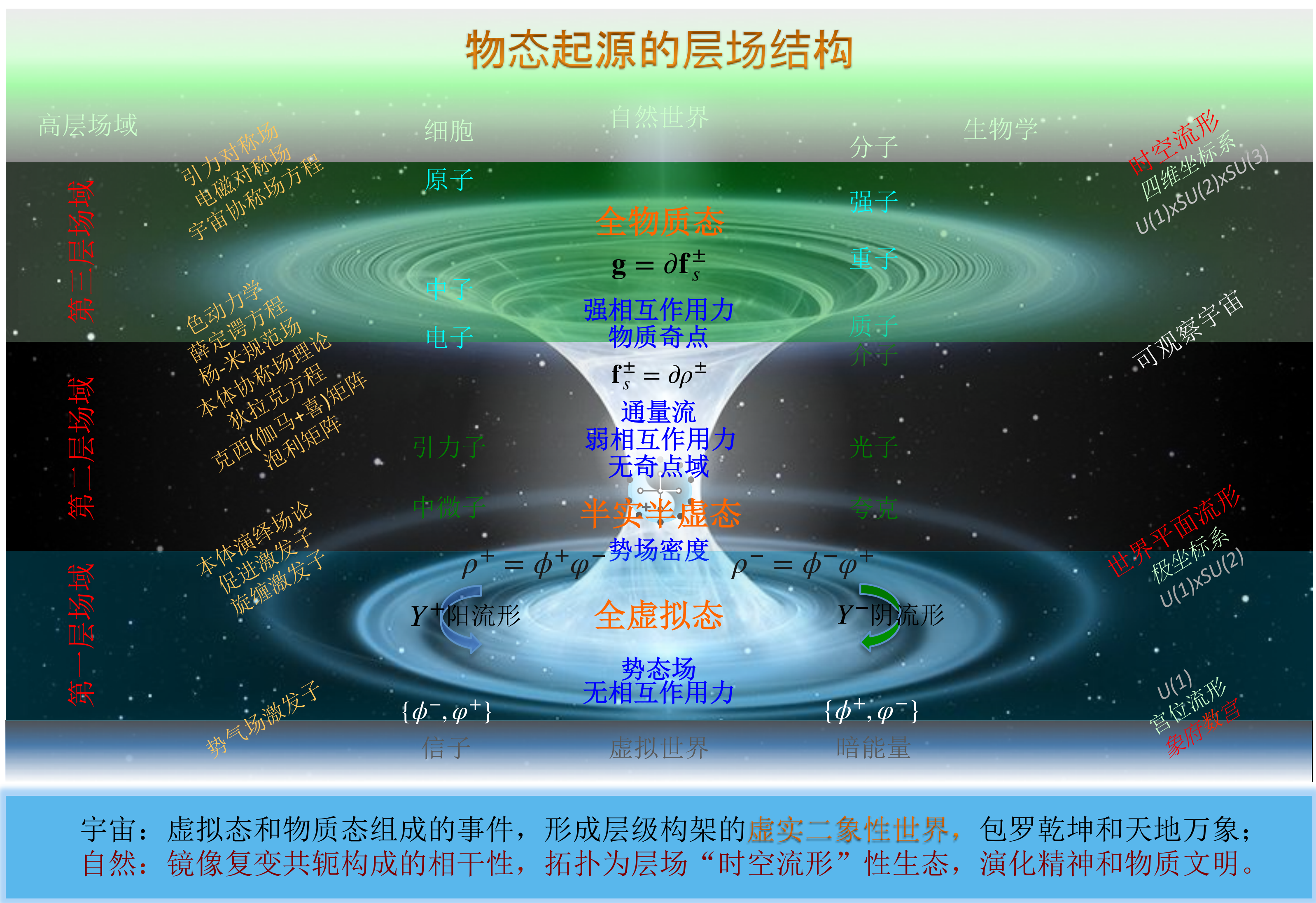


图 *9.7.1*：宇宙世界的拓扑结构

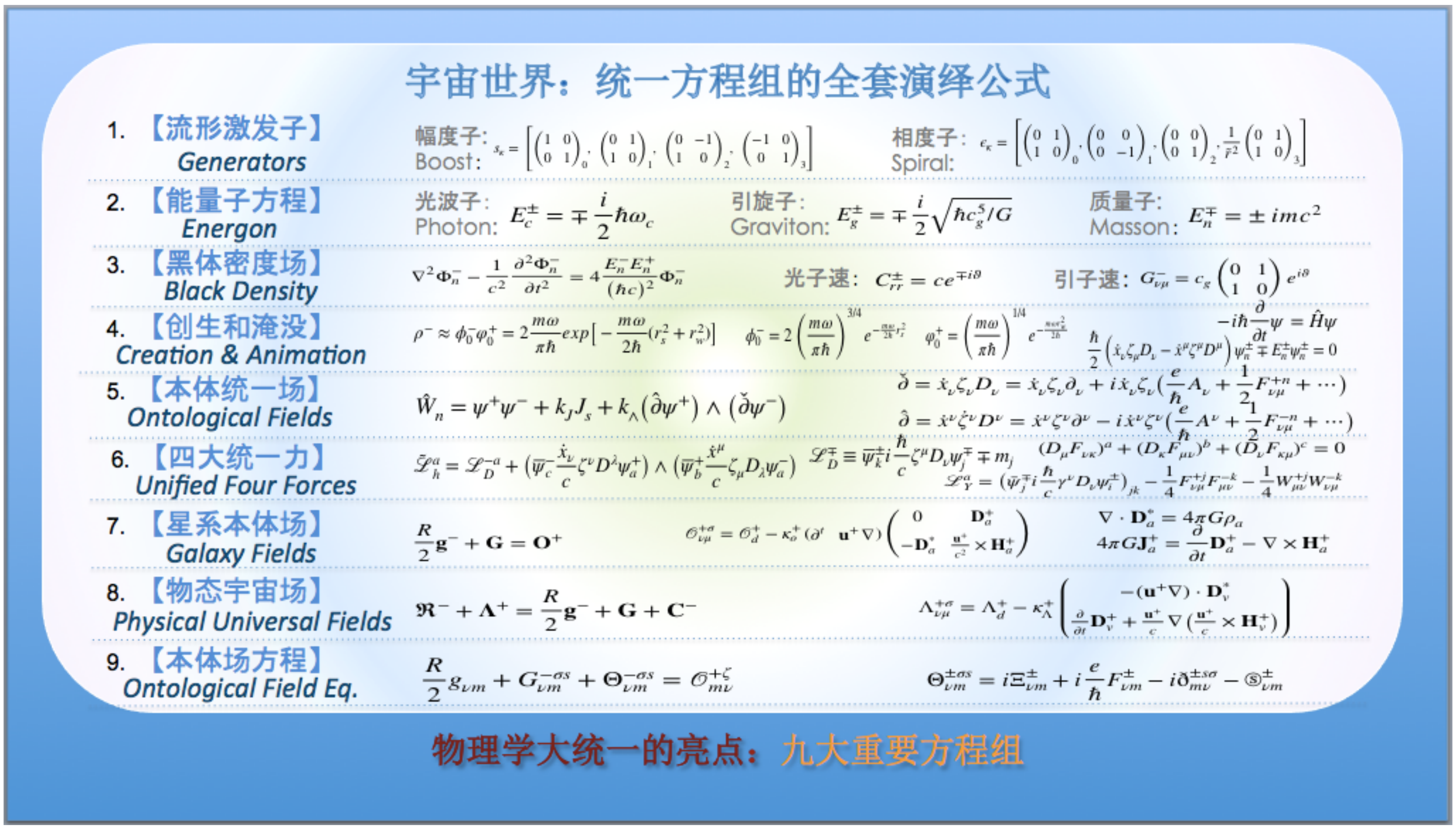


图 9.7.2：物理学大统一的九大重要方程组

由此，实现了历时一个世纪的《物理学大统一》盛宴，于2019年圆满结束！

请迎接人类【本体学】启航……

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Sciences in Dialectical Nature of Virtual and Physical Duality

虚实二象辩证性的自然科学

Keywords: Spacetime topology, General theory of fields and particles, Quantum mechanics and field theories, Thermodynamics, Electromagnetism, General relativity and gravitation, Cosmology.

关键词：时空拓扑，场与粒子的广义理论，量子力学与场理论，热力学，电磁学，广义相对论与引力，宇宙学。

PACS: 04.20.Gz, 11.00.00, 03.00.00, 05.70.-a, 41.00.00, 04.00.00, 98.80.-k,

Universal and Unified Field Theory
宇宙统一场论

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Universal and Unified Field Theory

Wei Xu (徐崇伟)

Mr. *Wei XU* is a resourceful entrepreneur. From software engineer to tech guru, from executive to entrepreneur, he has over thirty years of extensive experiences in delivering comprehensive innovations in information technologies. From scientist to philosopher, his focus is on the *Scientific Principles of Natural Philosophy* to uncover whole structures of *Elementary Particles*, *Natural Ontology*, *Cosmology*, and *Unified Physics*.

Funded by the White House in 1993 to secure the first website of whitehouse.gov [a], Wei developed one of the top application firewalls in June 1994: Gauntlet Firewall [b], initiating the third generation firewalls [c]. Upon his successful completion of IPSec [d] research, he released the first commercial VPN product in the IT industry market in December 1994. As a pioneer of information security, Wei founded Spontaneous Networks in 1999, where he created the cloud service security on-demand transformable at the click of a button. Since then, he served as a chief Architect in many commercial and government organizations and delivered thousands of virtual secure datacenter networks nationally and internationally. Today, he is developing the groundbreaking innovations: *Virtual Productive Forces* and next generation of *Internet Protocols*, enlightened by his recent scientific discoveries.

During the two years in 2009 and 2010, Wei received a set of books in the old classic manuscripts: Worlds in Universe. Appeared initially as the profound topology of universe in philosophy, it has gradually groundbreakings and concisely revealed the theoretical physics: i) the constitution of *Elementary Particles* including *Dark Energy* in 2013 [e], ii) *Universal Topology and Framework* in 2015, iii) *Universal and Unified Physics* in 2018 [f], iv) Framework of "*Natural Cosmology*" in 2018 [g], and v) inception of "*Ontology of Nature*" in 2019 [h].

Mr. Xu holds his BS and his first MS degrees in theoretical physics from *Ocean University* of China and *Tongji* University, and his second MS degree in Electrical and Computer Engineering from University of Massachusetts" [i].

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宇宙统一场论

宇宙信使：徐崇伟 (Wei Xu)

A. 五大科学发现：宇宙统一物理学和能量子理论

2009-2010年，首次获得了一套《宇宙世界》自然纲要经书集，启蒙【本体科学】的诞生

2013年圣诞，首次获得形成夸克粒子的《宇宙信子》理论，发现宇宙能量子de1通讯原理

2017年圣诞，首次获得了能量子本体学的统一理论，发表了四篇论文《物理学统一理论》

2018年12月，首次获得《广义协变场理论》 全面完善和超越了经典物理学的“广义相对论”

2019年04月，首次获得《宇宙统一场理论》书籍，启蒙了融合精神与物质的【本体科学】

B. 五大技术首创：30年科技实践的华裔美籍之路

1994~1998年，被美国白宫信息高速公路机构运作的TIS聘为科学家，1994年，开创了美国著名“手铐防火墙” (Gauntlet Firewall)，首创 应用防火墙WAFW。同年，独立 首创著名 “虚拟私网”(IPSec/VPN)产品，为因特网密钥交换协议(IKE)和网络地址转换(NAT)的创始者。

2000年，开创美国迅网公司，首创虚拟安全云，开发“云”、“软件定义网”和“动态虚拟私网”。

2004年，诺斯罗普·格鲁曼高级网络师，设计安全云“虚拟密钥”布局，运营于欧美非网络系统。

2010年，美国交通部数据中心任首席技术设计师，运筹指导各类信息技术项目的创新和升级。

2016年，美国威瑞森通讯公司任首席设计师，主持政网信息数据中心的现代化和升级换代。

2013-2019年，开创拓扑因特网架构，启蒙生态产业链(虚拟社会关系和虚拟生产力)的诞生。

C. 学位：理论物理+量子芯片+电子计算机+信息工程 (双硕士)

1978-1982年，中国改革初开放第一届77级大学生，中国海洋大学理论物理系 学士

1984-1987年，同济大学物理系 (著名声学家魏墨盦教授指导) 光电调制和检查 硕士

1991-1994年，美国麻省州立大学电子与计算机工程系攻读博士，获 量子芯片 硕士

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