

The Force of Gravity belongs to another Cosmology.

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Abstract.

This article summarizes theoretical based evidence related to practice for the prediction that the universe is not originated from a Big Bang. Instead cosmology could be based on a Double Torus Universe, as is published in my papers in the Vixra-archive. In a few website-articles I also express my vision on the revision of physics and cosmology within this framework. This paper in particular highlights how Gravity could violate General Relativity by a (new) dark energy force in the new Cosmology. This framework contains the connection of the Newton-Gravity force for tiny matter-particles to a dark matter force, producing “+” and “-” mass-generation, both at scales of about 10^{-22} meter. This can cause repulsive gravity in nature. This can open-up a new energy-source for travelling through space by non-relativistic scaling.

Introduction.

In this paper I refer to three important articles published in the institutional network^[1,2,3], which support all of my Vixra-papers^[4] about the Double Torus hypothesis for the Universe. I resume the evidence for critics in this paper. The eye-catcher is: I solved the discrepancy of vacuum energy density in the Double Torus Universe. This discrepancy is still existing in the Big Bang cosmology. Therefore this topic could be used to pillar the justification of the Double Torus hypothesis. In addition several kinds of other topics illustrate why I think the Universe is a Double Torus based on ‘extra time’, emerging from below the Planck-scale and added to the always ongoing time-arrow in the Big Bang. The introduction of a ‘new dark energy force’ shows an anti-gravitational energy-source is at the dawn of revealing another Cosmology.

Discrepancy of vacuum energy density.

I have solved the discrepancy of the energy-density of vacuum, both giving different results when calculated from the quantum-mechanics on one hand and General Relativity on the other hand. From the quantum mechanics point of view it follows 10^{114} J/m^3 and from the Relativity point of view follows $\approx 10^{-8} \text{ J/m}^3$. The difference is a factor $\approx 10^{122}$, which is unexplainable for decades. I have solved this discrepancy by means of the (new) dark energy force F_{de} in the Double Torus hypothesis. The F_{de} -formula is divided into two parts (as a product): The force of gravity for matter-particles (making our visible world) and the force of gravity for dark matter (making the universe a recalculated domain in a new cosmology). This is formulated as the lowest force limits (\downarrow):

$F_{de} = \downarrow F_N^G \times \pm \downarrow F_{dm} [(m^8/s^3) N^2]$, being effective on a scale of about 10^{-22} meter.

On the other hand two independently developed general mathematical expressions from the beginning of the Double Torus hypothesis show a ratio between the amount of (new) dark energy (Λ) and dark energy force (F_{de}). When this is related to the proposal for (new) dark energy (other than the cosmological constant), being 'extra time from under the Planck-scale' added to the always ongoing time-arrow after the Big Bang-start, it is obvious all the (new) dark energy 'is used for the F_{de} -force in vacuum. This could only result in a vacuum energy-density emerging from the ratio Λ/F_{de} . The (new) dark energy is called: 'dark energy-time'.

What happened is: My calculations resulted in a value for vacuum-energy-density as follows: $\Lambda/F_{de} = 10^{-114}[x]$, which is slightly larger than the one I calculated directly from the F_{de} -formula in another Vixra-paper, with the value $10^{-116}[x]$. Note here, the dimension $[x]$ is related to the vacuum energy-density $[J/m^3]$, however, matching the Double Torus geometry. This is related as follows:

$[x] = [kg^4s^2] = [(kg/m) (kg^3 m^2 s^4)]$ in the Double Torus geometry. However, $[J/m^3] = [(kg/m) (1/s^2)]$. So $[1/s^2]$ from the conventional quantum- world has to be transformed in $[(kg^3 m^2 s^4)]$ in the Double Torus world. This means the two directional Big Bang quantum-time is dimensionally refined as a mass-sphere-surface that is enclosed by a surface, which operates now in four quantum-directions in the Double Torus geometry.

So, what does this mean? Well, the vacuum energy-density, calculated by means of quantum mechanics, is compensated by $10^{114} \cdot 10^{-114} = 1$ in the Double Torus geometry. Hence this solves in the existing discrepancy that lasted for decades. The former mentioned difference between 10^{-116} and 10^{-114} is due to the calculated value by means of the F_{the} only and not by the ratio Λ/F_{de} .

Firstly it is easy to understand the vacuum energy density calculated from General Relativity is remaining on $\approx 10^{-8} J/m^3$. However, secondly, the difference-factor 10^{-2} between 10^{-116} and 10^{-114} directly points to the contribution of a dark matter density of $10^{-6} J/m^3$ and a visible matter density of $10^{-2} J/m^3$ in the vacuum. The difference-factor 1/100 is due to how the dark matter force couples to the forces making the world visible (the strong- and electroweak-force). This is all happening at a scale of about 10^{-22} meters.

So, this eye-catcher reveals how the decade old discrepancy is solved in the Double Torus hypothesis. I also like to note in this context, that the F_{de} formula is based on 5 extra space-dimensions and 2 extra time directions, which is different from the M-theory with its five-folded dual string theories with 7 extra space-dimensions and one ongoing time direction in the Big Bang.

α -dipole.

Then there is my calculation about the α -dipole, which is calculated with the new F_{de} force. The α is the fine-structure constant, which is a measure for the strength of the electromagnetic force. However, it appears the α is not only larger in one direction (the direction towards the beginning of the Big Bang), but also larger in the opposite direction. So, it seems we observe the α in a cylindrical space in both opposite ways, which comes together at the 'other side' of the cylinder-shape: Just exactly as the Double Torus geometry predicts! In other words: The elaboration with the α -dipole is an indication for the existence of a Double Torus universe.

Neutrino faster or not faster than light.

Then we have the affair of the neutrinos-faster-than-light in the CERN experiments during September 2011 and May 2012. In one of my papers I presented a 'set of equations' to show the derivations and calculations to show neutrinos can go faster than light! The extra condition, however, is: There has to exist a dark matter density with 'negative mass', which drives the neutrinos to go faster than light. That is exactly what I calculated with the (new) F_{de} -formula. The value for 'that faster-than-light' resulted in 62 nanosecond faster-than-light (kept within the margins of the experiments). This could rehabilitate the possibility of violation of Relativity, in particular because the references^[1,2,3] support this mathematically and axiomatically.

Higgs, Higgs-like or Dark matter force.

I think the Higgs is no Higgs-particle, but an indication of a 'dark matter force'. This is based on my set of equations in one of my papers. Dark matter can manifest in a surface as a torus-particle with spin expressed in the dimension $[(m \cdot m^3) \cdot (m/s)]$. Moreover, this dark matter-space-particle, coded as $\pm m^2_{dm} [m^5/s]$ accelerates in $[m/s^2]$. So, the dimension of the 'dark matter force' becomes $[(m^2/s)^3]$. This force can be "-," as well as "+". On July 4 2012, CERN found a 'Higgs-like-particle', which I think it is not. I think it is the possible detection of a 'dark matter force', being a force to have the potential to violate the General Relativity, because of the negative mass-characteristic, related to the references^[1,2,3]!

Dark matter flow.

There is also a 'dark matter flow' in the universe (In real! ; astronomically observed). Also this follows from the dark matter force $F_{dm} = \pm m^2_{dm} \cdot (k'_{de})^{1/2} [(m^2/s)^3]$. Wherein $(k'_{the})^{1/2}$ is the dark matter acceleration $[m/s^2]$, wherein $(k'_{the})^{1/2} = \{(c^5 O_e)/2\}^{1/2}$. The dark matter force is present everywhere in the vacuum, powered by the (new) dark energy time (the 'extra time' from below the Planck-scale) and hence manifests itself as a dark flow, streaming through the Double Torus geometry.

Conclusions.

The framework describing the Double Torus hypothesis already offers a 'set of equations' that could be applied in physics and cosmology, in experiments and mathematical analysis. The framework contains the connection of the Newton-Gravity force for tiny matter-particles and a dark matter force, producing "+" and "-" mass-generation, both at scales of about 10^{-22} meter. The fundamentals for the framework, that started with the derivation of the dark energy force-formula, is based on non-relativistic scaling. This non-relativistic-formula appeared to be mathematically correct by an independently developed mathematical expression. Meanwhile, also other references in the institutional network, points to the investigation and theoretical possibility, that repulsive gravity has not be excluded on forehand from Relativity. The new (non-relativistic) and (new) dark energy force-formula points clearly to the possibility repulsive gravity can be caused in nature. This can open-up a new energy-source for travelling through space by non-relativistic scaling.

References.

[1] Cabbolet, M.J.T.F. (October 2010). Elementary Process Theory: a formal axiomatic system with a potential application as a foundational framework for physics supporting gravitational repulsion of matter and antimatter. *Annalen der Physik* 522 (10): 699–738. DOI:10.1002/andp.201000063.

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Summarizing, the Elementary Process Theory is a scheme of seven well-formed closed expressions, written in the mathematical language of set matrix theory – a generalization of Zermelo-Fraenkel set theory. In the physical world, these seven expressions can be interpreted as elementary principles governing the universe at super small scale. The author critically confronts the theory with Quantum Mechanics and General Relativity, and applies these principles to show what might have happened during the Planck era of the universe, to show how mental causation might work, and to show how gravitational repulsion might function – if it exists.

[2] arXiv:1103.4937v1[gr-qc] 25 Mar 2011; “CPT symmetry and antimatter gravity in general relativity”.

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Abstract – The gravitational behavior of antimatter is still unknown. While we may be confident that antimatter is self-attractive, the interaction between matter and antimatter might be either attractive or repulsive. We investigate this issue on theoretical grounds. Starting from the CPT invariance of physical laws, we transform matter into antimatter in the equations of both electro dynamics and gravitation. In the former case, the result is the well-known change of sign of the electric charge. In the latter, we find that the gravitational interaction between matter and antimatter is a mutual repulsion, i.e. antigravity appears as a prediction of general relativity when CPT is applied. This result supports cosmological models attempting to explain the Universe accelerated expansion in terms of a matter-antimatter repulsive interaction.

[3] JHEP04(2011)029: On the origin of gravity and the laws of Newton.

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Abstract: Starting from first principles and general assumptions we present a heuristic argument that shows that Newton's law of gravitation naturally arises in a theory in which space emerges through a holographic scenario. Gravity is identified with an entropic force caused by changes in the information associated with the positions of material bodies. A relativistic generalization of the presented arguments directly leads to the Einstein equations. When space is emergent even Newton's law of inertia needs to be explained. The equivalence principle suggests that it is actually the law of inertia whose origin is entropic.

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