

# The Cherry on *Tau*

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## Abstract

I propose to rewrite the volume equation for the non-euclidian spherical Universe in terms of *tau* instead of  $\pi$ . Written this new way, a truly elegant equation and deeper structure becomes visible. Further, I postulate that the Universe *is* the Fundamental Theorem of Calculus, i.e. that the 3 dimensional Universe we live in is the derivative-surface of its 4 dimensional hypersphere volume.

*“What really worries me is that the first thing we broadcast to the cosmos to demonstrate our “intelligence” is 3.14 .... I am a bit concerned about what the lifeforms who receive it will do after they stop laughing at creatures who must rarely question orthodoxy.”*

— Bob Palais,  *$\pi$  Is Wrong!*

$$2\pi^2 r^3$$

The above is the volume equation for the non-Euclidian spherical Universe, first proposed by Riemann, Einstein and Friedmann. Here is a link to [Albert's original manuscript](#) (Courtesy of the Einstein Archives Online ©)[1] [2] and the printed transcript from his book *Relativity: The Special and the General Theory, Chapter XXXI. The Possibility of a "Finite" and Yet "Unbounded" Universe*[3]:

*"Perhaps the reader will wonder why we have placed our "beings" on a sphere rather than on another closed surface. But this choice has its justification in the fact that, of all closed surfaces, the sphere is unique in possessing the property that all points on it are equivalent. I admit that the ratio of the circumference  $C$  of a circle to its radius  $r$  depends on  $r$ , but for a given value of  $r$  it is the same for all points of the "world-sphere"; in other words, the "world-sphere" is a "surface of constant curvature".*

*To this two-dimensional sphere-universe there is a three-dimensional analogy, namely, the three-dimensional spherical space which was discovered by Riemann. Its points are likewise all equivalent. It possesses a finite volume, which is determined by its "radius"  $2\pi^2 r^3$ . Is it possible to imagine a spherical space? To imagine a space means nothing else than that we imagine an epitome of our "space" experience, i.e. of experience that we can have in the movement of "rigid" bodies. In this sense we can imagine a spherical space."*

The volume equation for the 3d-Euclidian Universe is  $v = \frac{4}{3}\pi r^3$ . Einstein's General Relativity, however, established non-Euclidian geometry as the actual geometry of space.

The volume equation for the non-euclidian spherical Universe, i.e. the 3d hypersurface volume of a 4 dimensional sphere (a so-called hypersphere or 3-sphere  $S^3$ ), is  $v = 2\pi^2 r^3$ . Mathematically, the value of the maximum volume of the entire Friedmann Universe is  $2\pi^2 r^3(t)$  [4] [5].

In my previous article [On the geometry of Space](#)[6], I used the same equation  $2\pi^2 r^3$  for the 3d hypersurface and postulated that "[...] (2) Space might be the collapsed-compactified (fibration) of its higher  $4d_{L+R} S^3$  hyper-sphere to its 3d transverse slice, this surface adopting the topology of a closed and flat left+right handed trefoil knot. [...]", the blueprint of which is still visible in the Cosmic Microwave Background (CMB) radiation images.

However,  $2\pi^2 r^3$  as equation for the volume of the Universe is not satisfactory. It makes not much sense.

$$(\tau r) \cdot \left(\frac{1}{2}\tau r^2\right)$$

But look, just by splitting up and re-arranging, a truly elegant equation rises to the surface:

$$2\pi^2 r^3$$

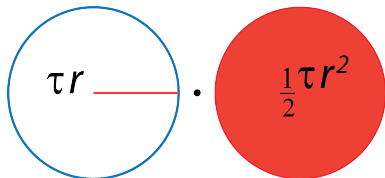
$$2\pi \cdot \pi \cdot r^2 \cdot r$$

$$(2\pi r) \cdot (\pi r^2)$$

Make yourself familiar with *Tau* ( $\tau$ ) and behold it frequently in spirit. Here is some literature:

- Joseph Lindenberg: [Tau Before It Was Cool](#) and many other links;
- Bob Palais: [pi Is Wrong!](#)
- Michael Hartl: [The Tau Manifesto](#), also with many other links.

Setting  $\tau = 2\pi$  and thus  $\pi = \frac{1}{2}\tau$  we find:



Imagine Einstein had used *tau* instead of  $\pi$ . You immediately see that the first part of the equation is the Circumference  $C = \tau r$  of the circle and the second part is the Area formula  $A = \frac{1}{2}\tau r^2$ . The latter, as Lindenberg and Hartl recall, is a *quadratic form*.

Quadratic forms - which can be found in many equations in physics - arise whenever you integrate a function  $f(x) = k \cdot x$ .

On his website [Tau Before It Was Cool](#) Joseph Lindenberg sums up the following ‘Examples of the Same Pattern in Physics Formulas’:

$f(x) = (k \cdot x)$		Quadratic form: $\int (k \cdot x) dx$	
<b>1d Circumference <math>C</math></b>	$\tau \cdot r$	<b>2d Area <math>A</math></b>	$\frac{1}{2} \tau \cdot r^2$
Momentum $p$	$m \cdot v$	Kinetic Energy (KE)	$\frac{1}{2} m \cdot v^2$
Angular Momentum $L$	$I \cdot \omega$	Rotational Energy	$\frac{1}{2} I \cdot \omega^2$
Applied Torque $\tau$	$k \cdot \theta$	Potential Energy	$\frac{1}{2} k \cdot \theta^2$
Applied Force $F$ in Hooke’s Law	$k \cdot x$	Elastic Potential Energy	$\frac{1}{2} k \cdot x^2$
Electric Flux Density $D$	$\epsilon \cdot E$	Electric Field Energy Density	$\frac{1}{2} \epsilon \cdot E^2$
Magnetic Flux Density $B$	$\mu \cdot H$	Magnetic Field Energy Density	$\frac{1}{2} \mu \cdot H^2$
Charge $q$	$C \cdot V$	Energy stored in the electric field of the Capacitor	$\frac{1}{2} C \cdot V^2$
Flux $\phi$	$L \cdot I$	Energy stored in the magnetic field of the Inductor	$\frac{1}{2} L \cdot I^2$

As you will notice, by remembering only the basic volume equation for the non-Euclidian spherical Universe,  $(\tau r) \cdot (\frac{1}{2} \tau r^2)$ , you get many equations for free.

But there is more to that! This very basic pattern  $(kx) \cdot \int (kx) dx$  or  $(\tau r) \cdot (\frac{1}{2} \tau r^2) = \frac{1}{2} \tau^2 r^3$  requires that  $C$  and  $A$  are mixed together, they are intertwined into a conserved quantity, there is a dot between them. And the mix between them results in a Conservation Law.

From Michael Weiss and John Baez: *Is Energy Conserved in General Relativity?*

“In ordinary high-school analytic geometry, a (two-dimensional) vector  $v$  has components, say  $(v_1, v_2)$ . While  $v$  is a geometrical object, existing free from the confines of any coordinate system, the same is not true for the components  $v_1$  and  $v_2$  – they depend on the choice of the axes and their scales. If you change the coordinate system – say you rotate the axes – then the components change according to a standard formula. We say that  $v$  has an *invariant meaning*, while the components are *coordinate dependent*.

Now in relativity, neither energy nor momentum by themselves have invariant meaning, just like time and space.

*But if we weld the energy and momentum together, we get a geometric object called a 4-vector that is invariant.* That is, if  $E$  is the energy and  $p = (p_1, p_2, p_3)$  is the momentum, then  $(E, p_1, p_2, p_3)$  is the *energymomentum 4-vector*. The energymomentum 4-vector basks in celebrity, being the second most famous 4-vector; the top spot is held by the *time-space 4-vector*,  $(t, x, y, z)$ . That’s why we say that the energy is the *time component* of the energymomentum 4-vector: it occupies the same slot that time does in the time-space 4-vector.

If we want to conserve something, it better have an invariant meaning. The energymomentum 4-vector  $p$  fills the bill.”

Likewise, we can extend the table as follows (Annex 1 contains the table in full):

$(\mathbf{k} \cdot \mathbf{x}) \cdot \int (\mathbf{k} \cdot \mathbf{x}) \, d\mathbf{x}$		$\int [(\mathbf{k} \cdot \mathbf{x}) \cdot \int (\mathbf{k} \cdot \mathbf{x}) \, d\mathbf{x}] \, d\mathbf{x}$		
<b>3d hypersurface</b> of $S^3$ (a 4d sphere)	$\frac{1}{2} \tau^2 \cdot r^3$	<b>4d hypervolume</b> of $S^3$ (a 4d sphere)	$\frac{1}{8} \tau^2 \cdot r^4$	<b>Associated Conservation Laws</b>
		The relativistic <b>Energy-Momentum tensor</b> (or <b>Stress-Energy tensor</b> ) $T^{\mu\nu}$ . The energy-momentum tensor is conserved when $\nabla_\mu T^{\mu\nu} = 0$ .		The 4-divergence of the Stress-Energy tensor $T^{\mu\nu}$ gives <b>Conservation of Energy</b> and <b>Conservation of Linear Momentum</b> .
In Newtonian mechanics in <b>3d</b> , the Angular Momentum is defined as $\mathbf{L} = I\boldsymbol{\omega}$ , which can be reduced to $\mathbf{L} = \mathbf{r} \cdot m\mathbf{v} = \mathbf{r} \cdot \mathbf{p}$ .		In relativistic mechanics in <b>4d</b> , this is generalised to the <b>Angular-Momentum tensor</b> $\mathbf{M} = X \wedge P$ or, in tensor components, $M^{\mu\nu} = X^\mu P^\nu - X^\nu P^\mu$ where $X^\mu$ is the four-position and $P^\nu$ the energy-momentum four-vector.		<b>Conservation of Angular Momentum</b> .
		In special relativity, the <b>torque</b> acting on a point-like particle is defined as the <b>derivative of the Angular Momentum tensor</b> given above with respect to proper time: $\Gamma = \frac{d\mathbf{M}}{d\tau} = \mathbf{X} \wedge \mathbf{F}$ or, in tensor components, $\Gamma^{\mu\nu} = X^\mu F^\nu - X^\nu F^\mu$ where $F$ is the 4-Force $F = \frac{dP^\mu}{d\tau}$ .		
		The <b>Elastic Modulus tensor</b> (or <b>Elastic Stiffness tensor</b> ) of fourth rank $c_{ijkl}$ relates the <i>stress tensor</i> $\sigma_{ij}$ and the <i>strain tensor</i> $u_{ki}$ in the linear Hooke's law $\sigma_{ij} = c_{ijkl} u_{ki}$ .		<b>Conservation of Energy</b> .
		<ul style="list-style-type: none"> <li>▪ The <b>Electromagnetic Displacement tensor</b> <math>D^{\mu\nu}</math> cross-combines the <b>D</b> and <b>H</b> fields;</li> <li>▪ The <b>Electromagnetic Field tensor</b> <math>F^{\mu\nu}</math> cross-combines the <b>B</b> and <b>E</b> fields;</li> <li>▪ The <b>Magnetization-Polarization tensor</b> <math>M^{\mu\nu}</math> combines the <b>P</b> and <b>M</b> fields;</li> </ul> The three field tensors are related by: $D^{\mu\nu} = \frac{1}{\mu_0} F^{\mu\nu} - M^{\mu\nu}$ ; and $\partial_\mu D^{\mu\nu} = J^\nu$ .		<b>Conservation of Electromagnetic Energy and Momentum</b> .
		<ul style="list-style-type: none"> <li>▪ The <b>charge q</b> becomes <b>charge density <math>\rho</math></b>; the <b>current I</b> becomes <b>current density j</b>. The <b>current four-vector</b> <math>J^\mu = (c\rho, j^1, j^2, j^3)</math> cross-combines <b>charge density</b> and <b>current density</b>.</li> <li>▪ The <b>flux <math>\Phi</math></b> of the Magnetic Flux Density <b>B</b> becomes the <b>magnetic vector potential A</b> where <math>\mathbf{B} = \nabla \times \mathbf{A}</math>. The <b>potential four-vector</b> <math>A^\mu = (\frac{V}{c}, A^1, A^2, A^3)</math> cross-combines <b>electric scalar potential</b> and <b>magnetic vector potential</b>.</li> </ul>		The 4-divergence of the 4-current $J^\mu$ gives the <b>Conservation of Charge</b> .  The 4-divergence of the 4-potential $A^\mu$ gives the <b>Conservation of EM 4-potential</b> .

## The Universe *is* the Fundamental Theorem of Calculus

The following is from S. Gong, 1989 [7] *The problem of the maximum volumes and particle horizon in the Friedmann Universe Model, Astrophysics and Space Science, Springer, 1989, 158, 1-7:*

...

From the Robertson-Walker metric (Weinberg, 1972)

$$ds^2 = c^2 dt^2 - R^2(t) \left[ \frac{dr^2}{1 - kr^2} + r^2 d\theta^2 + r^2 \sin^2 \theta d\phi^2 \right] \quad (1)$$

the volume element is

$$dv = \sqrt{g} \, dr \, d\theta \, d\phi = R^3(t)(1 - kr^2)^{-1/2} \, r^2 dr \, \sin \theta \, d\theta \, d\phi \quad (2)$$

where  $R(t)$  is the cosmological scale factor,  $k$  is a parameter related to the space-time curvature with  $k = 0, -1$  for an open universe and  $k = +1$  for the closed universe.

After integrating (2), the volume becomes

$$v = 4\pi R^3(t) \int_0^r r^2 (1 - kr^2)^{-1/2} \, dr \quad (3)$$

$$v = 2\pi R^3(t)(\chi - \sin \chi \cos \chi) \quad (4)$$

where  $\chi = \sin^{-1} r$ ; thus (4) can be written as

$$v = 2\pi R^3(t) (\sin^{-1} r \pm r\sqrt{1 - r^2}) \quad (5)$$

- sign for  $\sin^{-1} r \leq \frac{1}{2}\pi$ ;    + sign for  $\sin^{-1} r > \frac{1}{2}\pi$

In (4) or (5), the maximum value within the bracket is  $\pi$ , thus the maximum volume  $V_{mv}$  is readily taken as  $2\pi^2 R^3(t)$  in current books (Weinberg 1972; Heidmann, 1980 [8]; and Zel'dovich and Novikov, 1983 [9]). The maximum volume is usually called the full volume of the closed universe.

...

However, an easier way to come to the same solution exists in taking the derivative of the volume of the 4d hypersphere  $\frac{1}{8}\tau^2 r^4$  (or  $\frac{1}{4}\pi^2 r^4$ ) with respect to  $r$  which gives you the surface area  $\frac{1}{2}\tau^2 r^3$  (or  $2\pi^2 r^3$ ).

As a matter of fact, for each and every sphere up to dimension  $n$ , the derivative of the volume of the sphere with respect to  $r$  equals its surface area.

What this means is that the 3d Universe we live in, is the derivative-surface of its 4d hypersphere volume and that implies that each and every point in space is, in the end, a compressed-compactified *infinitesimal point* that has a *virtual* (with a real and *imaginary part*) pre-image. This pre-image is an auxiliary tool, embracing each infinitesimal point, and contains more mathematical degrees of freedom than the number of physical degrees of freedom in our 3d hypersurface. This virtual but necessary pre-image gives an overcomplete description of physical reality that, at the same time, is conditioned to a real outcome (only virtual images that give real outcomes seem to be allowed).

The equations of General Relativity are defined in terms of - *truly virtual, higher dimensional* - tensors. In Quantum Mechanics, observables are described in terms of - *truly virtual, higher dimensional* - Hermitian operators which result in real-valued outcomes on the 3d hypersurface. General Relativity and Quantum Mechanics have ‘real-based fantasy’ in comon.

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# The Cherry on $\tau$

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Essay written for the Gravity Research Foundation 2018 Awards for Essays on Gravitation.

## Annex 1

$f(x) = (\mathbf{k} \cdot \mathbf{x})$		Quadratic form: $\int (\mathbf{k} \cdot \mathbf{x}) dx$		$(\mathbf{k} \cdot \mathbf{x}) \cdot \int (\mathbf{k} \cdot \mathbf{x}) dx$		$\int [(\mathbf{k} \cdot \mathbf{x}) \cdot \int (\mathbf{k} \cdot \mathbf{x}) dx] dx$		
<b>1d</b> Circumference $\mathcal{C}$	$\tau \cdot r$	<b>2d</b> Area $A$	$\frac{1}{2} \tau \cdot r^2$	<b>3d</b> hypersurface of $S^3$ (a 4d sphere)	$\frac{1}{2} \tau^2 \cdot r^3$	<b>4d</b> hypervolume of $S^3$ (a 4d sphere)	$\frac{1}{8} \tau^2 \cdot r^4$	<b>Associated Conservation Laws</b>
Momentum $p$	$m \cdot v$	Kinetic Energy (KE)	$\frac{1}{2} m \cdot v^2$			The relativistic <b>Energy-Momentum tensor</b> (or <b>Stress-Energy tensor</b> ) $T^{\mu\nu}$ . The energy-momentum tensor is conserved when $\nabla_\mu T^{\mu\nu} = 0$ .		The 4-divergence of the Stress-Energy tensor $T^{\mu\nu}$ gives <b>Conservation of Energy</b> and <b>Conservation of Linear Momentum</b> .
Angular Momentum $L$	$I \cdot \omega$	Rotational Energy	$\frac{1}{2} I \cdot \omega^2$	In Newtonian mechanics in <b>3d</b> , the Angular Momentum is defined as $\mathbf{L} = I\boldsymbol{\omega}$ , which can be reduced to $\mathbf{L} = \mathbf{r} \cdot m\mathbf{v} = \mathbf{r} \cdot \mathbf{p}$ .		In relativistic mechanics in <b>4d</b> , this is generalised to the <b>Angular-Momentum tensor</b> $\mathbf{M} = \mathbf{X} \wedge \mathbf{P}$ or, in tensor components, $M^{\mu\nu} = X^\mu P^\nu - X^\nu P^\mu$ where $X^\mu$ is the four-position and $P^\nu$ the energy-momentum four-vector.		<b>Conservation of Angular Momentum.</b>
Applied Torque $\tau$	$k \cdot \theta$	Potential Energy	$\frac{1}{2} k \cdot \theta^2$			In special relativity, the <b>torque</b> acting on a point-like particle is defined as the <b>derivative of the Angular Momentum tensor</b> given above with respect to proper time: $\Gamma = \frac{d\mathbf{M}}{d\tau} = \mathbf{X} \wedge \mathbf{F}$ or, in tensor components, $\Gamma^{\mu\nu} = X^\mu F^\nu - X^\nu F^\mu$ where $F$ is the 4-Force $F = \frac{dP^\mu}{d\tau}$ .		
Applied Force $F$ in Hooke's Law	$k \cdot x$	Elastic Potential Energy	$\frac{1}{2} k \cdot x^2$			The <b>Elastic Modulus tensor</b> (or <b>Elastic Stiffness tensor</b> ) of fourth rank $C_{ijkl}$ relates the <i>stress tensor</i> $\sigma_{ij}$ and the <i>strain tensor</i> $u_{ki}$ in the linear Hooke's law $\sigma_{ij} = C_{ijkl} u_{ki}$ .		<b>Conservation of Energy.</b>
Electric Flux Density $\mathbf{D}$	$\epsilon \cdot E$	Electric Field Energy Density	$\frac{1}{2} \epsilon \cdot E^2$			<ul style="list-style-type: none"> <li>The <b>Electromagnetic Displacement tensor</b> <math>D^{\mu\nu}</math> cross-combines the <math>\mathbf{D}</math> and <math>\mathbf{H}</math> fields;</li> <li>The <b>Electromagnetic Field tensor</b> <math>F^{\mu\nu}</math> cross-combines the <math>\mathbf{B}</math> and <math>\mathbf{E}</math> fields;</li> <li>The <b>Magnetization-Polarization tensor</b> <math>M^{\mu\nu}</math> combines the <math>\mathbf{P}</math> and <math>\mathbf{M}</math> fields;</li> </ul> The three field tensors are related by: $D^{\mu\nu} = \frac{1}{\mu_0} F^{\mu\nu} - M^{\mu\nu}$ ; and $\partial_\mu D^{\mu\nu} = J^\nu$ .		<b>Conservation of Electromagnetic Energy and Momentum.</b>
Magnetic Flux Density $\mathbf{B}$	$\mu \cdot H$	Magnetic Field Energy Density	$\frac{1}{2} \mu \cdot H^2$					
Charge $q$	$C \cdot V$	Energy stored in the electric field of the Capacitor	$\frac{1}{2} C \cdot V^2$			<ul style="list-style-type: none"> <li>The <b>charge</b> <math>q</math> becomes <b>charge density</b> <math>\rho</math>; the <b>current</b> <math>I</math> becomes <b>current density</b> <math>j</math>. The <b>current four-vector</b> <math>J^\mu = (c\rho, j^1, j^2, j^3)</math> cross-combines <b>charge density</b> and <b>current density</b>.</li> <li>The <b>flux</b> <math>\Phi</math> of the Magnetic Flux Density <math>\mathbf{B}</math> becomes the <b>magnetic vector potential</b> <math>\mathbf{A}</math> where <math>\mathbf{B} = \nabla \times \mathbf{A}</math>. The <b>potential four-vector</b> <math>A^\mu = (\frac{V}{c}, A^1, A^2, A^3)</math> cross-combines <b>electric scalar potential</b> and <b>magnetic vector potential</b>.</li> </ul>		The 4-divergence of the 4-current $J^\mu$ gives the <b>Conservation of Charge</b> .
Flux $\Phi$	$L \cdot I$	Energy stored in the magnetic field of the Inductor	$\frac{1}{2} L \cdot I^2$					

$I =$	The Moment of Inertia $I$ is a tensor of the second rank whose terms are a property of the body and relate $L$ to $\omega$ by $L_i = \sum_j I_{ij}\omega_j$ .
$\omega =$	Angular velocity.
$k =$	Spring constant.
$\epsilon =$	Permittivity of the medium (or material), or electric constant, a physical value characterizing the response of a medium (e.g. a solid) to the electric component $E$ of an external electromagnetic field, where the permittivity $\epsilon$ is a scalar. If the medium is anisotropic, the permittivity is a second rank tensor.
$\epsilon_0 =$	Permittivity of the free space or the vacuum.
$\epsilon_r =$	The relative permittivity of the medium or 'dielectric constant'.
$\mu =$	Permeability of the medium (or material) which, in general, is a tensor quantity, a measure of how easily a magnetic field can pass through a medium.
$\mu_0 =$	Magnetic permeability of the free space or the vacuum.
$\mu_r =$	The relative magnetic permeability of the medium.
$E =$	Electric Field Intensity/Strength; or strength of the Electric field.
$H =$	Magnetic Field Intensity/Strength; or strength of the Magnetic field.
$D =$	Electric Flux Density; also called Electric Displacement Field. $D = \epsilon E = \epsilon_0 \epsilon_r E$ .
$B =$	Magnetic Flux Density (magnetic field vector) (magnetic induction). $B = \mu H = \mu_0 \mu_r H$ .
$q =$	Electric charge.
$\rho =$	Electric charge density. The amount of electric charge per unit length, surface area, or volume.
$I =$	Electric current.
$j =$	Electric current density. The amount of electric current per unit area of cross section.
$C =$	Capacitance. A quantitative measure of the ability of an object or material to retain electric charge $q$ . Charged particles of the same sign attempt to go out of a charged body due to electrostatic repulsion. In a system of conductors, a correspondence between their electric charges $q$ and electric potentials $V$ is determined by the linear relation $q_i = \sum_j C_{ij}V_j$ ( $C_{ij}$ is called the <i>capacitance matrix</i> of the $i^{\text{th}}$ and $j^{\text{th}}$ conductors).
$V =$	Electric potential difference, a scalar quantity.
$\Phi =$	Magnetic flux. The flux of the Magnetic Flux Density (magnetic field vector) $B$ through a given surface area $S$ .
$L =$	Self-Inductance, a physical quantity (in <i>henries</i> ). In electrical circuits, any changing current $I$ produces a magnetic field around the current-carrying wire (e.g. a loop or coil of wire). In other words, when the current in the wire-circuit itself is changing, this generates a magnetic flux $\Phi$ acting on the circuit. The magnetic field created by the changing current in the circuit itself induces a voltage (a back EMF) in the same circuit that counters or tends to reduce the rate of change in the current, and thus also opposes changes in the magnetic flux. The ratio of the magnetic flux $\Phi$ to the current $I$ is called the 'Self-Inductance' $L = \frac{\Phi}{I}$ , which is usually simply referred to as the inductance of the circuit.

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Exp.: 09-RTPI-03909.4/2018

Ref. 16/2018/5549  
Frederik VANTOMME  
C/ de Omega 32 Piso 4º Blq. A Pta. C  
28032 Madrid

Para su conocimiento y efectos oportunos, se le notifica que el Registro Territorial de la Propiedad Intelectual de la Comunidad de Madrid ha adoptado, con fecha 28 de agosto de 2018, la siguiente Resolución:

"Vista la solicitud de inscripción de derechos sobre la obra titulada **'The Cherry on Tau'** presentada en este Registro como Científica, el **24 de mayo de 2018**, a la que correspondió el número **M-003457/2018** y examinada la documentación aportada junto a ella, ha obtenido calificación jurídica favorable.

Por ello, de conformidad con lo dispuesto por el artículo 145.2 del Texto Refundido de la Ley de Propiedad Intelectual, aprobado por Real Decreto Legislativo 1/1996, de 12 de abril (TRLPI), y de acuerdo con las funciones atribuidas a los Registros Territoriales por el artículo 3 del Reglamento del Registro General de la Propiedad Intelectual, aprobado por Real Decreto 281/2003, de 7 de marzo (RRGPI),

### RESUELVO

Practicar, de conformidad con la matriz que se incorpora como anexo a la presente resolución, la inscripción de derechos instada por D/Dª **Frederik VANTOMME**, sobre la obra titulada **'The Cherry on Tau'**, presentada en el Registro de la Propiedad Intelectual, el **24 de mayo de 2018**, a la que correspondió el número **M-003457/2018**."

En cumplimiento de esta resolución, se remite copia de la matriz de inscripción con número de asiento registral **16/2018/5549**, de fecha **03 de septiembre de 2018**.

De conformidad con lo dispuesto en el artículo 25 del RRGPI la presente Resolución podrá ser impugnada:

- En la vía jurisdiccional civil, ante los Juzgados de lo Mercantil de Madrid, en el caso de acuerdos relativos a la inscripción y fundados en la validez o invalidez de los títulos, en la capacidad de las partes o en la existencia o inexistencia de los derechos inscribibles, así como en cualquier otra cuestión de naturaleza jurídico-privada.
- En vía administrativa, en el caso de resoluciones que tengan su fundamento en la aplicación de normas de procedimiento administrativo. En este caso, se significa que esta Resolución no pone fin a la vía administrativa, pudiendo interponer recurso de alzada ante el Viceconsejero de Cultura, Turismo y Deportes, o ante el Registrador Territorial de la Propiedad Intelectual, en el plazo de un mes contado a partir del día siguiente al de la recepción de la presente notificación.

En caso de concurrencia simultánea de las causas previstas en los apartados a) y b), la vía de impugnación procedente será la civil.

Todo ello, sin perjuicio de que pueda ejercitar cualquier otro recurso que estime procedente.

Madrid, 03 de septiembre de 2018  
EL REGISTRADOR DE LA PROPIEDAD INTELECTUAL  
(P.D.F. Resolución de 7.03.17)  
LA JEFA DE SUBSECCIÓN DE PUBLICIDAD REGISTRAL  
Mª ANTONIA MORLA JUARISTI

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**Comunidad  
de Madrid**



**MINISTERIO  
DE CULTURA  
Y DEPORTE**

**REGISTRO TERRITORIAL  
DE LA PROPIEDAD INTELECTUAL**

## **REGISTRO GENERAL DE LA PROPIEDAD INTELECTUAL**

Según lo dispuesto en la Ley de Propiedad Intelectual (Real Decreto Legislativo 1/1996, de 12 de abril), quedan inscritos en este Registro los derechos de propiedad intelectual en la forma que se determina seguidamente:

### **NÚMERO DE ASIENTO REGISTRAL 16 / 2018 / 5549**

**Título:** The Cherry on Tau

**Objeto de propiedad intelectual:** Texto

**Clase de obra:** Científica

### **PRIMERA INSCRIPCIÓN**

#### ***Autor/es y titular/es originarios de derechos***

- **Apellidos y nombre:** VANTOMME, Frederik

**Nacionalidad:** Bélgica

**D.N.I./N.I.F./Pasaporte:** 75031421588

#### ***Observaciones a la inscripción***

El derecho de propiedad intelectual que se protege por la presente inscripción registral es únicamente el relativo a la expresión literaria que aparece en el ejemplar identificativo aportado. No son objeto de propiedad intelectual las ideas, procedimientos, sistemas, métodos operativos, conceptos, principios o descubrimientos que pudieran contenerse en dicho ejemplar.

#### ***Datos de la solicitud***

**Núm. solicitud:** M-3457-18

**Fecha de presentación y efectos:** 24/05/2018

**Hora:** 09:29

En MADRID, a tres de septiembre de dos mil dieciocho

El/La titular del Registro

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