A New Force Smaller Than The Smallest Gravity.

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Date: November 4 2013 (version-3): A few irregularities were repaired. These were not of main importance for main theory. Additionally a new insight is given to the reason why neutrinos may indeed violate Relativity without excluding it or devaluate it.

(the second version was of May 15 2012; the version 1 was of November 28, 2011)

Abstract.

In this version 3 the formulations are given for the existence of a force smaller than the smallest gravity. This is a new dark energy force, which affects neutrinos differently than is assumed according to current physics. The formulations also imply a different look on the Higgs-mass and dark matter-mass. A deeper analysis became important, because a new cosmological hypothesis is involved. The CERN-experiments on these issues are far from criticism. My set of equations mentioned in my paper "A New Dark Energy Force Theoretically Calculates Faster-than-light-neutrinos" and "Duonistic Neutrinos Violate Relativity" reveal such a criticism. However, until now my formulations withstand a hurricane, even after a Director of the OPERA-project had to resign. My set of equations theoretically proves the neutrino-faster-than-light experiments had to be investigated to the bottom.

Overview.

A New Cosmology introduces a Double Torus Geometry for the universe. This new hypothesis characterizes the Big Bang as a limited perception, which means the Big Bang is just an 'impression'. Not a reality. Instead space time is part of a new recalculating dynamics in the Double Torus geometry. A solid base in this hypothesis is a new *dark energy force formula*. This *new force* represents a *new definition for dark energy,* which is not Einstein's 'cosmological constant'. The *new formula* recalculates the reality within a torus of dark matter with visible matter being an affiliate-state of dark matter. The inner dark matter torus is embedded (and intertwined) in a torus of dark energy. This *dark energy* is characterized by *three time directions: One time direction above and two time directions from below the Planck scale*. The new dark energy force formula and the Double Torus refined time theoretically prove why and how neutrinos could go faster than light (see paper-list[1] : Duonistic Neutrinos Violate Relativity). It discloses 62.8 nanoseconds time-gain in flight-path for neutrinos compared to the light- speed in vacuum within the experimental statistical and systematic limits.

More remarkable is this 'neutrino-time-gain' is independent of any trajectory ! It is dependent of two neutrinos being in the same 'duo-state of energy' (like super-conductivity in electromagnetism with Cooper-pairs). This 'duo-state of energy' enables them to pass the boundaries of Relativity. My theoretical research discloses the discovery Einstein's Relativity (Gravity- and Big Bang-framework) being a part of a Double Torus Cosmology. I do not exclude them, despite the faster than light neutrinos.

My new dark energy force formula was derived by me, Dan Visser[2] (Almere, the Netherlands) in 2004, and published on my website on April 10 2004. Then the British Christopher Forbes (PhD mathematics-physics and Fellow of the Royal Astronomical Society) picked it up and succeeded to express it in a general mathematical formulation (this was the first 'viXra-paper' of September 1 2009).

In part 1 I start with the set of equations as I also used in the paper "Duonistic Neutrinos Violate Relativity".

PART 1 (here some expressions are repaired without damage on the main-principles):

$$F_{de} = \pm k_{de} m^3 \left[(kgm)^3 \frac{N}{s} \right]$$

$$F_{de} = darkenergy - force - formula$$

$$k_{de} = \frac{c^5 O_e}{2G} \left[J \frac{m^2}{s} \right] \equiv \left[\left(kg \frac{m^3}{s} \right) \frac{m}{s^2} \right]$$

$$k_{de} = flow - of - accelerated - mass - volume$$

$$c = lightspeed$$

$$O_e = \left(Plancklength \right)^2$$

$$G = gravitational - Newton - const.$$

$$m^3 = m_{vm} . \left(m_{dm} \right)^2$$

$$index - vm = visible - mass$$

$$index - dm = dark - matter - mass$$

$$k_{de} \left[\frac{\left(kg \frac{m^3}{s} \right) \frac{m}{s^2}}{\left(kg \frac{m^3}{s} \right)} \right] \Rightarrow F_{de} = \pm \left(k_{de} \right)' \left[\frac{m}{s^2} \right] . m_{vm} [kg] . \left(m_{dm} \right)^2 \left[kg^2 \right] \left[\left(kg \frac{m^3}{s} \right) \right]$$

$$F_{de} = \left(k_{de} \right)' m_{vm} [N] . \left(\pm m_{dm} \right)^2 \left[\frac{(kgm)^3}{s} \right]$$

with

$$g = \left(k_{de} \right)'$$

$$F_{de} = mg [N] . \left(\pm m_{dm} \right)^2 \left[\frac{(kgm)^3}{s} \right]$$

$$F_{de} \equiv F_G [N] . \left(\pm m_{dm} \right)^2 \left[\frac{(kgm)^3}{s} \right]$$

$$F_{de} = \langle gravity - force \rangle \otimes \langle darkmatter - squared \rangle$$

$$F_G = mg = G \frac{Mm}{R^2} [N]$$

The first meaning of this part is to make clear a new dark energy force is universal and gravity-force is not fundamental. The second meaning is I need this part to rewrite towards a set of equations with the Newton's constant G at the surface of a new geometry: A Double Torus.

PART 2:

I start with rewriting the dimensional form:

$$F_{de} = \pm \frac{c^5 O_e}{2G} m^3 \left[(kgm)^3 \frac{N}{s} \right] \Rightarrow F_{de} = \pm \frac{c^5 O_e}{2} m^3 \left[\frac{1}{G} (kgm)^3 \frac{N}{s} \right]$$

$$\left[\frac{1}{G} (kgm)^3 \frac{N}{s} \right] = \left[\left(\frac{1}{G} kg \right) .kg.kg.m^3 \frac{N}{s} \right] = \left[\frac{m^3}{s^2} .kg.kg.m^3 \frac{N}{s} \right] = \left[m^3 . \left(kg \frac{m}{s^2} \right) .kg.m^2 \frac{N}{s} \right] =$$

$$\left[m^3 .N. \left(kg \frac{1}{s} \right) m^2 N \right] = \left[m^3 \left(\frac{1}{G} kg \right) \frac{1}{s} \langle Gm^2 \rangle N^2 \right] = \left[m^3 . \frac{m^3}{s^2} \frac{1}{s} \langle Gm^2 \rangle N^2 \right] = \left[\frac{m^3 \langle Gm^2 \rangle m^3}{s^3} N^2 \right]$$

From this follows:

$$F_{de} = \pm \frac{c^5 O_e}{2G} m^3 \left[(kgm)^3 \frac{N}{s} \right] \Rightarrow F_{de} = \pm \frac{c^5 O_e}{2} m^3 \left[\frac{m^3 \langle Gm^2 \rangle m^3}{s^3} N^2 \right]$$

G is now expressed as a dimensional surface, like also mass is expressed as space and force. The directions of the forces (the '+' and '-' signs) are expressed inclusive as [N^2]. This implies two forces must be in there as seen in part 1.

As mentioned in part 1 the dark energy force (gravity-force x dark-matter) belongs in a new geometry. So, what I say is: "The established Holographic Principle is not limited to a surface enclosing a space-volume. It should be extended to a surface related to a Double torus space-volume. General mathematical equations has already described this in 2009, as follows:

$\int (\alpha x^2 + \beta x + \gamma) \, dx = k, \ k \in R,$

$\int (0) dx = k, k \in R$

$\int (\alpha x^2 + \beta x + \gamma) \, dx = \int 0 \, dx$

$\alpha x^2 + \beta x + \gamma = 0,$

$\alpha = G, \ \beta = 0, \ \gamma = -\frac{1}{4} c^4 (\text{h-bar})^2 m^6 G$

$x = \pm \frac{1}{2} c^5 m^3 G^{-1} (L_{planck})^2$

the x is my original dark energy force formula.

The general expression (13) can also be written as:

$\int (\alpha (F_{de})^2 + \gamma) \, dx = k, \ k \in R$

$$\alpha = G \ (\approx 6.67 \times 10^{-11} \ N \ m^2 \ kg^{-2})$$

$$\gamma = -\tfrac{1}{4} \ c^4 \ (\text{h-bar})^2 \ G \ M^6 \ (\approx 10^{-61} \ M^6)$$

For $\{\alpha(F_{de})^2 + \gamma = 0\}$ follows $F_{de} = \pm \tfrac{1}{2} \ c^5 \ M^3 \ G^{-1} \ (L_{planck})^2$

Notice how my original dark energy formula from my thought-experiment in 2004 emerge from this mathematics.

The mathematical equations were described by **Christopher Forbes** and his colleague Keith Lees. Both UK scientists assigned me to their publications http://vixra.org/abs/0909.0005 and http://vixra.org/abs/0910.0016.

The Y is the amount of dark energy and is dimensionally a Double Torus http://vixra.org/abs/1101.0096 (equation 5).

The Double Torus Universe exists of an outer torus of dark energy torus embedding and intertwining an inner dark matter torus. Visible mass is just effect of interactions in the dark.
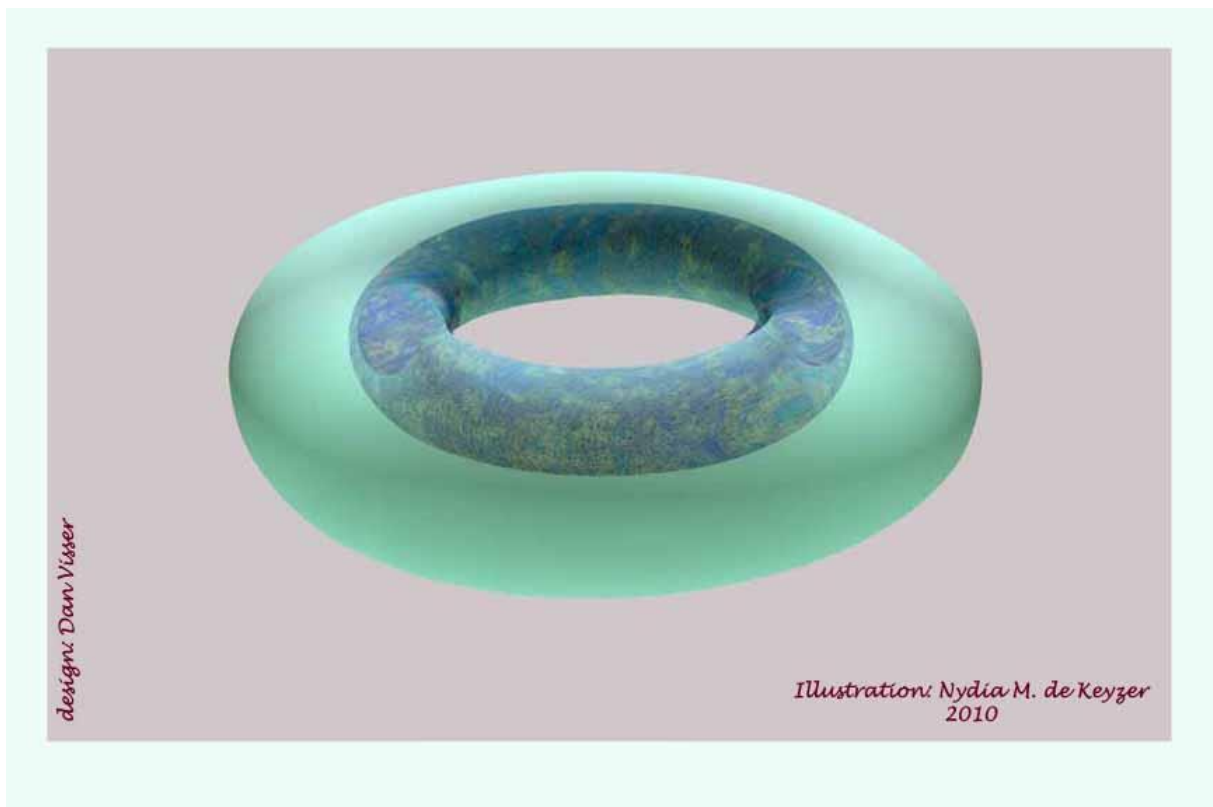

Fig.1: Double Torus Universe (Dan Visser, Almere, the Netherlands), wherein a new dark energy force is the pillar in a set of equations that explains why Einstein's Relativity can be violated by neutrino-pairs, called Duonistic Neutrinos, without abandoning Relativity.

The continuation in Part 2 is a step just as made in Part 1: A split-up in gravity-force x dark matter.

$$F_{de} = \pm k'_{de} m^3 \left[\frac{m^3 \langle Gm^2 \rangle m^3}{s^3} N^2 \right]$$

$$k'_{de} = \frac{c^5 O_e}{2} \left[\frac{m^7}{s^5} \right] \equiv \left[\left(\frac{m}{s^2} \right)^2 \frac{m^5}{s} \right]$$

Just as in Part 1 a split-up in m_{vm} (visible mass) and m_{dm} (dark matter mass) is justified, in order to get gravity-force x dark matter.

$$F_{de} = \pm k'_{de} m_{vm} m^2_{dm} \left[\frac{m^3 \langle Gm^2 \rangle m^3}{s^3} N^2 \right]$$

From this follows:

$$F_{de} = \pm \left\{ \left(k'_{de} \right)^{\frac{1}{2}} \left[\frac{m}{s^2} \right] . m_{vm} \left[kg \equiv \frac{Gm^3}{s^2} \right] \right\} . \left\{ \left(k'_{de} \right)^{\frac{1}{2}} \left[\frac{m}{s^2} \right] m^2_{dm} \left[\frac{m^5}{s} \right] \right\}$$

$$m^2_{dm} = \left[m^2 m^2 \frac{m}{s} \right] \equiv \left[spinning - space - disc \right]$$

From this follows:

$$F_{de} \equiv F_G [N] \otimes \langle accelerated - spinning - space - disc \rangle$$

$$F_{de} \equiv F_G [N] \otimes \pm F_{dark-matter} \left[\frac{m^6}{s^3} \right] \equiv \left[\left(\frac{m^2}{s} \right)^3 \right]$$

$$F_{de} \equiv F_G [N] \otimes \pm \langle the - spacial - flow - of - a - dark - matter - surface \rangle$$

The result is robust! It is telling the Newton gravity-force and the dark matter force cause (in two opposite directions) a force to hold together galaxies like a spinning space disc (turning left- or right).

However, the same logic could be applied on small particles, such as neutrinos. Hence that produce a smallest gravity-force and a smallest dark matter-force.

PART3:

The result of part 2 was:

$$F_{de} = \pm \left\{ \left(k'_{de} \right)^{\frac{1}{2}} \left[\frac{m}{s^2} \right] . m_{vm} \left[kg \equiv \frac{Gm^3}{s^2} \right] \right\} . \left\{ \left(k'_{de} \right)^{\frac{1}{2}} \left[\frac{m}{s^2} \right] m^2_{dm} \left[\frac{m^5}{s} \right] \right\}$$

For the smallest particles follows:

$$F_{de} = \left(\downarrow \lim F_G [N] \right) . \left(\downarrow \lim F_{dm} \left[\left(\frac{m^2}{s} \right)^3 \right] \right)$$

If this smallest dark energy force is only a smallest gravity-force, than the equation is:

The dark energy force F_{de} being a force smaller than the smallest gravity in Relativity. Therefore it affects neutrinos.

How does the (new) dark energy force affects neutrinos?

I think the answer is: In the current assumptions of physics only left-handed neutrinos occur in particles-experiments. Right-handed neutrinos have never been detected. Only anti-neutrinos have a right-handed helicity. In science history Ettore Majorana predicted that neutrinos and anti-neutrinos could be the same particle because they are neutral. Within the framework of the Standard Model Extension (SME theory), various theorists have suggested that the neutrino might have a tachionic nature, while others have disputed that possibility. In some theories of quantum theory with very high velocities the behavior of the particles becomes distinct from the relativistic ones. They can reach the speed of light at finite energy (which is odd and violating with Relativity).

A dark energy force F_{de} is able to divide the Ettore Majorana neutrinos in a left- and right-handed neutrino (not a right-handed anti-neutrino) and restore the chiral-symmetry of particles-antiparticles as originally defined for Dirac-fermions with their + and − helicity. Then for neutrinos the following (blue) ball picture will be valid (fig. 1):
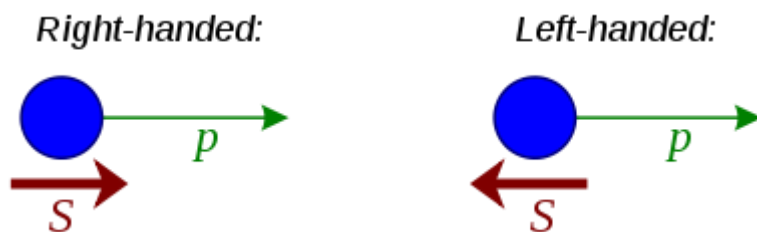
For $\vec{s} + \overset{\leftarrow}{s} = 0$ the spin energy (s) of both neutrinos is seperated by

$$\leftarrow F_{de} \rightarrow$$

Fig 1: Neutrinos with momentum (p) and their projected helicities (s). If the projection of (s) on (p) is 1 than the neutrinos are massless and can reach the speed of light. If not, than neutrinos do have mass and cannot reach the speed of light. It is known neutrinos can vary their mass. However, in his new case of F_{de} we have no anti-neutrinos. This means two equal neutrinos with a different helicity-projection on both neutrino-spins(s) on (p) demands the existence of the force F_{de} according to the energy equivalence principle. This new force is the *dark energy force, which restores the symmetry between left-and right-handed neutrinos.*

New Higgs-mass.

In addition to my 'paper' **http://vixra.org/abs/1108.0048** I point out that a new Higgs-mass might be in focus. The reason is that particles as neutrinos are most sensitive for a dark matter field. As a result of my analysis now I understand why CERN has difficulties to find the Higgs-mass within the expected ranges of energy being left behind after the first exclusions by CMS an ATLAS. If they find it in the range of 114 to 145 GeV/c^2 (with a preference at 120 GeV/c^2). On July 4 2013 a Higgs-like particle was measured at 125 GeV/c^2). I think it could be a signal of dark matter force as described in my equations within the framework of the Double Torus. Eventually, if the Higgs-field is really

existing, the Higgs-mass has to be found at a value of ± 0.5 x 0.5 (TeV/c^2)^2 = <u>2.5 (TeV/c^2)^2</u> (Tetra !). This value is squared and different from the solo-value of 0.5 (TeV/c^2)^2 as I calculated in the afore mentioned 'paper'; this makes it more difficult to find it. More I think dark matter will be the winner, because of its connection with the dark matter-term in my new dark energy force formula F$_{de}$ In the Double Torus framework

Note: In this version-3 explicitly I point out, that the derivations mentioned in part 1,2 and 3 are further detailed in follow-up papers. There it gives far more better insight in meaning and understanding of quantum gravity and the dark matter force. But I didn't had the purpose to change this pre-development-state in this paper, because of the authenticity. However, I add the latest insight I have on this date November 10 2013.

My derivation I basic form:

$$F_{de} = qF_g . \pm sqF_{dm}$$

$$F_{de} = b_g . \pm b_{dm}$$

The dark energy force = graviton x ± dark matter boson.

I call the state of the duo-force (graviton x ± dark matter boson): **GRANVINO force.**

This is named after the Tapas-restaurant in Torremolinos Spain at the Plaza San Miguel (restaurante 'Granvino').

My prediction is: The restoring of symmetry of the left and right-handed neutrino makes them super-conductive for Relativity like Cooper-pairs do with electrons to get super-conductive in electricity. However, if dark matter is near to the neutrino-couple during its path form the experimental source to the detection-source, the negative dark matter boson-state can make them look faster than the light-speed, because of the negative dark matter expands space. This will make them (the 'duonistic neutrinos) invisible for a short moment and are making them seemingly violating the light-speed when they are detected. Eventually they became super conductive for Relativity for a short moment.

Reference Vixra papers

[1] References: http://vixra.org/author/dan_visser

[2] Reference Dan Visser, owner of website www.darkfieldnavigator.com