Deeper properties through dark- and visible-matter in a new cosmological Twin-Tori Model (TTM).

Author: Dan Visser, ingE and independent cosmologist, Almere, the Netherlands.

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Abstract.

A new cosmological model, named the Twin-Tori Model (TTM)[1], postulates a dark energy force F_{de} , which empowers the dynamic of a lower order universe, well known as the big bang. In this paper I introduce the 1st derivative F'_{de} of this dark energy force to reveal deeper properties of the TTM, such as: why quantummechanics exists in the big bang, why dark matter and visible matter are equally responsible for gravity in galaxies for ¼ of the density of dark matter at a specific length, why the big bang universe is recalculated by subquantumlevel-information below the Plancklength, and why the impression of space-expansion is due to the higher order cosmological model TTM.

Introduction.

The 1st derivative of the dark energy force formula F_{de} is: F'_{de} . This force is mathematically described in a new cosmological model, named the *Twin-Tori Model (TTM)[1]*. The TTM is a "*double torus universe, existing of a dark energy torus enclosing a dark matter; the visible universe is part of the dark matter torus"*. The F_{de} force is of higher order than any force in the big bang universe and intertwines the dark energy and dark matter in the TTM. The 1st derivative F'_{de} of the TTM lowers the order to a big bang universe. This reveals deeper properties. Otherwise said: The big bang is a "deceptive appearance". This has been expressed in a mathematically derived time-simulation, which is described in the second "paper" out of three "papers", posted in the "viXra-archive"[1].

There is also some more history to this. The F_{de} formula was originally derived by me, Dan Visser, on April 4 2004 and published on my website on April 10 2004 (www.darkfieldnavigator.com). In retrospective a submission is planned to do to the viXra-archive[3]. Then in July/August 2009 my formula was noticed on my website by Christopher Forbes and colleague (PhD mathematicians / physicists, in the UK) and used in a publication of three "pre-papers", published in the viXra-archive on September 1 2009, October 11 2009 and November 28 2009. They succeed to show the F_{de} formula was embedded in a mathematical general formula, which revealed the "*universe to be a double torus of dark energy and dark matter"*. Meanwhile Christopher Forbes has developed extended TTM detailed mathematics ("never been seen") to offer for peer-review. However, although the TTM might be approached as a hypothesis, meanwhile observational proof has become available, which is in line with a specific and elegant derivation in this paper, that fundamentally shows dark matter and visible matter have the same fingerprint for gravity for ¼ of the density of dark matter at a specific length in a substantial amount of galaxies[2].

The derivation and implications of the 1st derivative F'$_{de}$ of the dark energy force F$_{de}$.

The original dark energy force formula of Dan Visser, Almere, the Netherlands, April 4 2004 is as follows:

$$F_{de} = -\frac{m^3 c^5 O_e}{2G}\left[\left(kgm\right)^3 Ns^{-1}\right] \quad (1)$$

This formula was derived in a "thought-experiment" and the derivation was submitted in retrospective to the viXra-archive[3]. There is a dimensional equivalence, as follows:

$$\left[\left(kgm\right)^3 Ns^{-1}\right] = \left[\left(Js\right)^3 ms^{-2}\right] \quad (1a)$$

The formula appeared to be embedded in a mathematical general expression, published in the viXra papers, viXra 0909.0005, viXra 0910.0016 and viXra 0911.0061, in co-authorship with Christopher Forbes and colleague (both PhD mathematicians/physics) and Dan Visser (ingE, independent cosmologist). The formula appeared to be not only **"-",** but **"+" or "-".** Their general expression is as follows:

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

x = F$_{de}$ and c is the light speed in vacuum. G is the Newton-constant and O$_e$ = (L$_{planck}$)^2 . The viXra "pre-papers" revealed a "double torus geometry", consisting of a dark energy torus, which embeds a torus of dark matter. Therefore the mass-parameter in the formula also includes dark matter.
F$_{de}$ can be re-written as impulses of dark matter (dm) and visible matter(vm):

$$F_{de} = \pm\left(1/2\right)\left(mc\right)_{dm} O_e \cdot \left(mc\right)_{vm}^2 \frac{c^2}{G}$$

$$F_{de} = \pm\left(1/2\right)O_e \frac{c^2}{G} xy^2$$

$$x = \left(mc\right)_{dm}, y^2 = \left(mc\right)_{vm}^2 \quad 3 \text{ ex } (3)$$

Now F$_{de}$ is splitted in two different functions as follows:

$$F_{de} = \pm f\left(x\right)\cdot f\left(y\right) \quad (4)$$

With

$$f(x) = (1/2) O_e \frac{c^2}{G} x$$

$$f(y) = y^2$$

2 ex (5)

Each will be differentiated: f(x)/dx and f(y)/dy. The mathematical rule for a product of functions is:

$$F'_{de} = f'(y) \cdot f(x) + f'(x) \cdot f(y) \quad (6)$$

This results in:

$$F'_{de} = \pm\{2y \cdot \frac{1}{2} O_e \frac{c^2}{G} x + \frac{1}{2} O_e \frac{c^2}{G} \cdot y^2\} \quad (7)$$

$$F'_{de} = \pm O_e \frac{c^2}{G} 2xy \cdot \{\frac{1}{2} + \frac{1}{4}\frac{y}{x}\} \quad (8)$$

$$F'_{de} = \pm \frac{h-bar}{c} 2(mc)_{dm} (mc)_{vm} \cdot \{\frac{1}{2} + \frac{1}{4}\frac{(mc)_{vm}}{(mc)_{dm}}\} \quad (9)$$

$$F'_{de} = \pm \frac{h-bar}{c} (2m_{dm}) \cdot (m_{vm} c^2) \cdot \{\frac{1}{2} + \frac{1}{4}\frac{(mc)_{vm}}{(mc)_{dm}}\} \quad (10)$$

From expression (10) two implications could be remarked in advance: They will show the existence of different subquantum-impulses within the boundaries of a black hole's event horizon, while at the same time different impulses could be made equal for specific values at a black hole's light-horizon.This shown in the following implications.

First implication:

This concerns the impulses. If:

$$\left(mc\right)_{vm} = 1 \Rightarrow m_{vm} = \frac{1}{c}\left[kg\right] \approx 0.33.10^{-8}\left[kg\right]$$

$$4\left(mc\right)_{dm} = 2 \Rightarrow m_{dm} = \frac{1}{2c}\left[kg\right] \approx 0.17.10^{-8}\left[kg\right] \quad \text{2 ex (11)}$$

Then: $$m_{dm} \ll m_{vm} \ll m_{planck} \approx 21 \cdot 10^{-8}\left[kg\right] \quad (12)$$

Or: $$m_{dm} \leq \frac{1}{100} m_{planck} \leq m_{vm} \quad (12a)$$

Then accordingly the factor between {..} in expression (10) becomes {½ +½}=1 and thus follows:

$$F'_{de} = \pm \frac{h - bar}{c} \cdot \left(2m_{dm}\right) \cdot \left(m_{vm} c^2\right) \quad (13)$$

The expressions 2 ex (11), (12) and (12a) show the mass-values m_{dm} and m_{vm} must be located within the radius (2m) of a black hole. They are valued 0.04 . 10^{-8} [kg] below and 0.12 . 10^{-8} [kg] above 1/100 m_{planck}. Remarkably the expression (13) is a dimensional geometry of two spins, as follows:

$$\left[Ns^2 \cdot m \cdot J\right] = \left[Nm \cdot J \cdot s^2\right] = \left[\left(Js\right)^2\right] \quad (14)$$

This explains and confirms the existence of quantum mechanics from a higher cosmological model (TTM) compared to expression (1a), which causes the impression of a universal expansion, because the original F_{de} formula had dimensions of three spins and an acceleration, while the 1st derivative lowers this dimension to two spins in a lower order universe, the big bang !

Second implication:

$$\frac{1}{4}\left(mc\right)_{dm} \Rightarrow \frac{\left(mc\right)_{vm}}{\left(mc\right)_{dm}} = 1 \Rightarrow \left(mc\right)_{vm} = \left(mc\right)_{dm} \Rightarrow \left(m_{vm} = m_{dm}\right) \quad (15)$$

Accordingly the densities of both impulses become equal. Thus also both densities:

$$\Omega\left(mc\right)_{vm} = \Omega\left(mc\right)_{dm} \quad (16)$$

$$\Omega_{dm} = \Omega_{vm}$$

Accordingly expression (17) changes the black hole radius of the event-horizon (2m) into the radius of the light-horizon (3m), as follows (18):

$$F'_{de} = \pm \frac{h-bar}{c}\left(2m_{dm}\right)\cdot\left(m_{vm}c^2\right)\cdot\{\frac{1}{2}+1\} \quad (17)$$

$$F'_{de} = \pm \frac{h-bar}{c}\left(3m_{dm}\right)\cdot\left(m_{vm}c^2\right) \quad (18)$$

Expression (18) shows an elegant evidence for the ¼ of the dark matter-density to be a parameter, which makes dark matter-gravity equal to visible matter-gravity for a specific length. This is exactly what has been found in observations of several galaxies [2].

Summarized: In general this paper shows that the expressions (1) to (18) justifies the existence of a subquantumlevel below the Plancklength, with is, as I call it, "i"-formation ("i" stands for "induced" information). The "ïnduced information" recalculates the Quantum Electro Dynamics. The uncertainty-principle in Quantum Electro Dynamics should be decreased by TTM-recalculation-principles.

Conclusions.

1) Quantummechanics in a big bang universe emerges from the a higher order cosmological model, named the TTM. 2) Dark matter and visible matter are equally contributing to gravity in galaxies for ¼ of the density of dark matter for a specific length. Not any sooner than this paper a fundamental explanation is now able to give an explanation for this phenomenon. 3) The big bang universe is recalculated by a subquantumlevel of "i"-formation below the Plancklength. This is empowered by the dark energy force in a higher order cosmological TTM. 4) The higher order cosmological TTM causes the impression of big bang space-expansion.

References:

[1] viXra:0909.0005 [pdf], "Short Article On A Newly Proposed Model Of Cosmology", submitted on Sep 1, 2009 in the category "Relativity & Cosmology"; viXra:0910.0016 [pdf], "Mathematical and Phenomenological Elements of the Twin-Tori Model of Physics and Cosmology", submitted on October 11 2009 in the category "Mathematical Physics"; viXra:0911.0061 [pdf], "A New Quantum Gravity Framework Based on the Twin-Tori Model of Cosmology. (Part 1), submitted on November 28 2009 in the category "Astrophysics".

[2] *Nature* 461, 627-628 (1 October 2009) | doi:10.1038/nature08437

[3] Retrospective submission of the original dark energy force formula (in this formula, U_u is similar to F_{de}) , Dan Visser, Almere, the Netherlands, will be posted to the viXra-archive (date adjusted later).