Mathematical Follow-up for Dark Energy and Dark Matter in the Double Torus Universe.

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Abstract.

The main issue in this paper is my mathematics to be presented about the maximum of dark energy depending on the information-differences on the wall of any volume in the Double Torus. Secondly the expressions must be worked out further by invitation to them how are triggered by my ideas the universe has a Double Torus geometry. Thirdly I go deeper into details with dark matter, not only stating dark matter is a spatial particle that spins and gets its energy from its acceleration into a dark matter torus, but also pretending dark matter gets its mass from the vacuum energy. I lay out the conditions for understanding why the Big Bang dynamics is therefore a part of the Double Torus and how the dark flow in the universe emerge from the Double Torus dark energy equation. Fourthly I refer to the pretention neutrinos should be sensitive for the flow of dark matter particles expressed in the set of equations in a former paper. But extensively this paper amplifies this theoretical neutrino-evidence, despite all the confusion around the truth of neutrinos-faster-than-light. Fifthly I observe some dark energy and dark matter issues from some of my former papers.

Introduction.

As a matter of fact I am writing a book about the Double Torus Universe for the dutch market. In this book I embedded a chapter about dark matter, where I gave answers on: 'What is dark matter seen from the perspective of the Double Torus geometry with dark energy as extra time'. This will be explained in this paper later on too.

Although my former 'paper' considered 'dark matter' more in detail[1], this 'paper' goes a little deeper by giving a detailed mathematical description for dark matter existing in combination with dark energy by 'two extra time-arrows' from the Planck-surface. As my 'set of equations'[1] already showed 'two extra time-arrows' are creating a 'spinning' space-disk to be a dark matter particle, which also accelerates into a dark matter torus geometry. However, now I present the general mathematical approach for the formulation of the maximum dark energy, which is dependent on the information-differences on the wall of any taken volume in that dark matter torus.

Originally a dark matter particle is 'spatial, according to my 'set of equations'. It is a 'spinning spatial particle'. The 'spinning spatial properties' are located on the surface given by the boundary of the dark matter torus and the dark energy torus. As a fact in the hypothesis any boundary given within the dark matter torus contains these properties, because the dark energy torus is intertwined with the dark matter torus. These properties are due to the 'information-differences' on any wall of any taken volume compared to that in Big Bang cosmology. This is also inspired and related to the thoughts playing a role in 'entropy-gravity'[1]. However, I walked my own path within my possibilities of self-supporting cosmology.

My mathematical equations presented in this 'paper' are meant for further mathematical exercises. Nevertheless I formulated a physical expression in prevision for this maximum dark energy. This might be odd, but isn't. I noticed that the preconditions of the

'two extra time-arrows' could accelerate the Double Torus energy, explaining why space in the Big Bang expands, and secondly a dark flow, already observed in the Big Bang cosmology, also emerge from this preconditions.
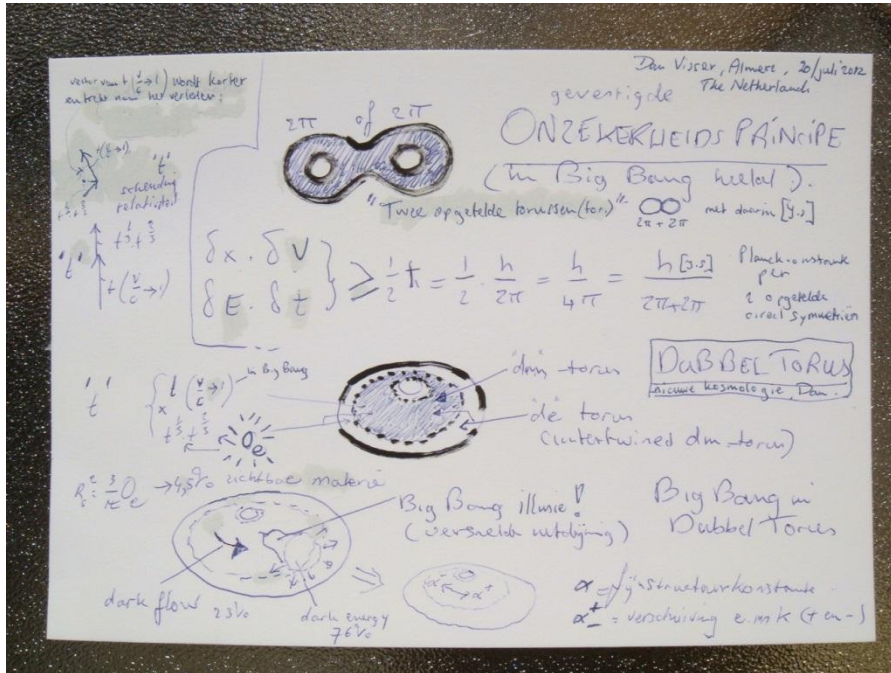

Main issues in Sketch

Fig 1: Here the image is shown to be aware a 'double torus' for the 'uncertainty principle of Heisenberg' in established physics is not the same as the geometry of the Double Torus in my new cosmology. In the sketch the Double Torus 'extra time' from the Planck-surface, additional to time in the Big Bang, is shown. Moreover, a 'dark flow' represents how the Big Bang just becomes an illusion, because vacuum energy is used for dark matter to transform from a spatial particle to a mass-particle. Also how the α-dipole is affected by these dynamics is shown. The α-dipole is a measure for the strength of the electromagnetic force and appears to be less or larger according to the effect of a dark flow. This embeds the illusion of the Big Bang into a recalculated universe, called the Double Torus. These dynamics justifies neutrinos being sensitive by dark matter flow, making them sometimes faster than light, despite the contradicting experimental results in CERN. Sketch: Dan Visser 2012.

Time in the Double Torus.

Time in the Double Torus is as follows:

$$\text{'(t}\rightarrow\text{)'} = (t\rightarrow)^{1/3}.(t\rightarrow)^{2/3}.\{ \text{ t voor } (v/c\rightarrow1) \}$$

The $(t\rightarrow)^{1/3}$ is time for 'dark matter' and en $(t\rightarrow)^{2/3}$ is time for 'dark energy'. They are generated by the Planck-surface. They are additional to the established time-arrow in the Big Bang. The Big Bang time-arrow is abbreviated as $\{ (t\rightarrow) \text{ for } (v/c \rightarrow1) \}$. Although time could have more relativistic directions, the ultimate time-arrow in the Big Bang progresses in one way due to entropy. So the 'Double Torus time' is determined by three 'time-arrows'.

The 'dark matter-time' and the 'dark energy time' vary in the exponent with respectively 0 to 1/3 en 0 to 2/3. At 0 for both '(t→)' = 1 and thus only the Big Bang time-arrow is present. At exponent-values 0 and 2/3 the 'extra time' does contribute to the Big

Bang time-arrow. This stretch of the Big Bang time-arrow provides an insight in future events (see up-left in fig. 1). The extension of 'time from the Planck-surface' is the fundament. This means: Once measured, it's gone. 'Two extra time-arrows become 0. So there is no 'dark energy time and 'dark matter time' anymore. Then the amount of Planck-surfaces has been altered. But a sense of future information is given. So, the 'information-differences' on the wall of any volume are altered. This means gravity is changed in that volume.

So the time-arrow of the Big Bang becomes longer if 'dark energy' (extra time) is applied from the Planck-surface? Yes! It implies a situation towards the future compared to the time-arrow in the Big Bang. It also generates 'dark matter particles', originally being spatially and having no mass. But they are getting mass, because its geometry spins as a spatial disk, which in turn also accelerates along the the 'dark matter torus'. In this way it is assimilating vacuum energy. This creates the illusion of an expanding space. It also causing the existence of the 'dark matter flow'. The 'dark flow' is observed for real. This explains why there is also an alpha-dipole of the fine-structure constant (a smaller value than 1/137 gets a "-" and a larger value gets "+"). This 'dark flow' could be observed in two opposite directions in dark matter torus. From one direction it approaches (so +) and from the other direction it disappears (so -). For the record, the 'extra time-arrows' I already applied in my 'time-torus' in 2009, then still being presented as a separate part outside the dark matter torus. That was put in a different perspective by Christopher Forbes using my 'dark energy force formula'. From that the Double Torus followed. Also my 'set of equations showed the 'extra time-arrows'.

In the image below (fig. 2) I sketched how the two time-arrows' emerge by inversing a Planck-hole.
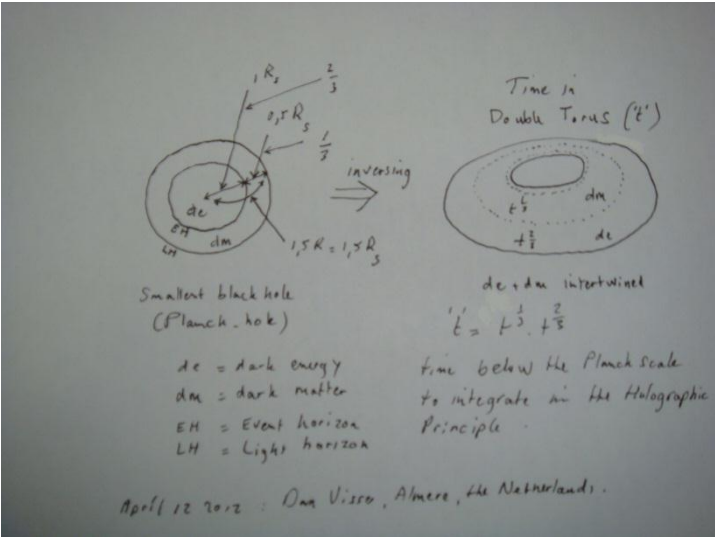

Fig. 2: 'Dark energy' and 'dark matter' from a Planck-hole are transformable to 'dark energy time' and 'dark matter time' as a Double Torus geometry.

My mathematics for the Double Torus dark energy.

It begins to sum a 'dark matter particle' to 'dark energy' over the 'extra time-arrow' which is valid for 'dark matter'. This sum is part of a sum of 'dark energy itself' over the 'extra time-arrow' which is valid for 'dark energy'. Hence, the mathematical expression for 'dark energy becomes a double sum as follows:

$$\left\{ 'E_{de}\left(\xi\right)'\right\}_{\max} = \sum_{d=\frac{2}{3}}^{c=0} \left[\xi\left\{\chi_{dm}\left(\Sigma\right)\right\}\right].dE_{de}\left(t^{c,d}\right) \tag{1}$$

With:

$$\xi\left\{\chi_{dm}\left(\Sigma\right)\right\} = \sum_{b=\frac{1}{3}}^{a=0} dE_{de}\left\{n.\left(O_e\right)^2, t^{a,b}, \left(k_{de}\right)^{\frac{1}{2}} \zeta\left(g\right)\right\} \tag{2}$$

Explanation:

$\left\{ 'E_{de}\left(\xi\right)'\right\}_{\max}$ is the maximum amount of 'dark energy' in a double function ξ. This double function exists of a spatial 'dark matter particle' χ_{dm} as a function of the sum $\left(\Sigma\right)$, which is a sum of all 'smallest amounts of dark energy' dE_{de}, which is determined by an amount n Planck-surfaces of which subsequently two are related by an 'information-difference' $\left(O_e\right)^2$, and the 'dark matter-time' $t^{a,b}$ and the 'dark matter acceleration' $\left(k_{de}\right)^{\frac{1}{2}}$ as a single function ζ of the gravitation acceleration (g).

$n.\left(O_e\right)^2$ is an amount of 'information-differences'.

Also the following is valid as in my 'set of equations'[1]:

$$\left(k'_{de}\right)^{\frac{1}{2}} = \left(\frac{1}{2}c^5.O_e\right)^{\frac{1}{2}} \quad \text{(constant)} \tag{3}$$

Five conditions are applicable on the formulas (1) en (2):

$$\left\{\left(a=0\right); \left(0 < b \leq \frac{1}{3}\right)\right\} \tag{4}$$

$$\left\{\left(c=0\right); \left(0 < d \leq \frac{2}{3}\right)\right\} \tag{5}$$

$$\left(k'_{de}\right)^{\frac{1}{2}} = \zeta\left(g + \frac{\left(k'_{de}\right)^{\frac{1}{2}}}{g}\right) \tag{6}$$

For:

$$\left(\left(k'_{de}\right)^{\frac{1}{2}} << g\right) \rightarrow \left(g + \frac{\left(k'_{de}\right)^{\frac{1}{2}}}{g}\right) = g \tag{7}$$

$$\left(g \uparrow_{max}\right) = \left(k'_{de}\right)^{\frac{1}{2}} \tag{8}$$

From this follows the maximum 'dark energy':

$$\left('E'\right)_{max} = \pm\left(m_{dm}\right)^2 \left(k'_{de}\right)^{\frac{1}{2}} t^{ab} t^{cd} \tag{9}$$

If the next is:

$$\left(ab = \frac{1}{3}; cd = \frac{2}{3}\right) \rightarrow \left(t^{ab} t^{cd} = t^{\frac{1}{3}} t^{\frac{2}{3}} = t\right) \tag{10}$$

Than follows:

$$\left('E'\right)_{max} = \pm\left(m_{dm}\right)^2 \left(k'_{de}\right)^{\frac{1}{2}} t \left[\frac{\left(m^2\right)^3}{s^2}\right] \tag{11}$$

The maximum 'dark energy' manifest differently than in its original form, namely as a "Double Torus per second squared". This means: An accelerated or decelerated energy of the Double Torus! It is this energy, which accelerates or decelerates the 'dark matter torus'. As a consequence it attracts or expands. This suggests the accelerated or decelerated expansion of the Big Bang universe, which has its dynamics within the 'dark matter torus'.

But if:

$$\left(k'_{de}\right)^{\frac{1}{2}} << g \rightarrow \left(g + \frac{\left(k'_{de}\right)^{\frac{1}{2}}}{g}\right) = g \tag{12}$$

And also if:

$$\left(ab = 0; cd = 0\right) \rightarrow \left(t^{ab} t^{cd} = t^0 t^0 = 1\right) \tag{13}$$

Then the 'extra time' disappears and the maximum 'dark energy' is transformed in a 'dark matter force'. From this follows:

$$\left('E'\right)_{max} \rightarrow F_{dm} = \pm\left(m_{dm}\right)^2 \left(k'_{de}\right)^{\frac{1}{2}} \left[\left(\frac{m^2}{s}\right)^3\right] \tag{14}$$

This means the de maximum 'dark energy' changes into a 'dark matter force', being 'a three dimensional surface-flow'. It must be the 'dark matter flow' observed astronomically!

If the 'dark matter force' decreases to its lowest limit, the Newton-gravity starts to dominate:

$$\downarrow \lim F_{dm} \rightarrow F_z = m_{vm} g = G \frac{m_1 m_2}{R^2} [N] \tag{15}$$

This is the reason for neutrinos to violate the light speed under specific circumstances. The 'specific circumstances are formed by the 'dark matter acceleration $(k'_{de})^{1/2}$, which is a single function of the gravitational acceleration (g) in the mathematical equations given in this paper and former 'papers'. This is valid for elementary particles like neutrinos. The gravitational acceleration (g) appears to have the lowest acceleration-limit at about $5.\,10^{-14}$ m/s^2. At that value (g) makes a transition to a 'dark matter acceleration'. At such a moment that is the lowest limit for 'dark matter acceleration'. If this increases a 'dark flow' exists. In this way neutrinos could gain more speed by the 'dark flow' than the light speed in vacuum. And because the vacuum energy is used to give the spatial spinning (and accelerating) dark matter its mass, less vacuum energy means the suggestion of an expanding universe and thus less obstruction for neutrinos to move faster through vacuum.

In retrospective dark matter in the Double Torus?

So in this 'paper' I brought forward the dark matter 'space-disk' has to assimilate energy from the vacuum. Then the 'dark matter particle' gains its mass. However, the 'dark matter particle' also accelerates by forming a torus-geometry. So, it assimilates again energy from the vacuum. In this way it gets its 'dark matter torus' shape.

In another former 'paper' I wrote the dark matter particle' has a rest mass of 2 keV/c^2 in about $0.7\,.10^{-22}$ meter and that the dark matter density is about 71 gram in a 1 million kilometer. 'Dark matter' depends on 'time in vacuum'. For this reason 'dark energy' is marked as energy. In this way I have found a 'dark energy' of 10^{-116} [kg^{4}s^2] according to my calculations in a former 'paper'. This value is based on a CMB-frame projected on the boundary of the 'dark matter torus' inside the 'dark matter torus'. But because the Big Bang is also imagined inside the 'dark matter torus', the CMB-frame is in limited sense a part of the Big Bang. Actually the CMB-frame can be considered as the boundary-area where 'dark matter' and 'dark energy' form the largest torus-geometry. In origin any other torus-geometry inside the 'dark matter torus' can serve as a boundary, because the 'dark energy' is intertwined with 'dark matter'.

In one of my former 'papers' I also found a value for 'dark energy' of $16.\,10^{-114}$ [Xs] in 6.4×10^{-48} [m^2] following from the ratio 'dark energy' en 'dark energy force', where I marked 'dark energy' as a new quantum spin in the Big Bang with an intrinsic dimension [X]. According to the other former 'paper' the dimension appears to be [kg^{4}s^2]. De [X] is thus dimensionally [kg^{4}s]. This is the mass in the torus geometrical surface and time in seconds. Dimensionally 'dark energy' is in [Xs]. Thus the spin of mass in the torus geometry.

The difference in the two dark energy values is due to a predicted kinetic energy of 1 TeV in a smaller surface. When this is correlated to the rest energy in a larger surface than both emerge a rest-energy of just more than 1.5 GeV in almost $0.5\,.\,10^{-44}$ m^2.

In a later stage, my understanding about 'dark matter' became stronger through my 'set of equations'. At that time I formulated an expression for 'dark energy' as a consequence of the 'two extra time-arrows' from the Planck-surface. As consequence of that, I reached a more mathematical formulation for the maximum of 'dark matter' and 'dark energy' in the Double Torus as written in this paper.

Looking into a further retrospective and observing the contact with Christopher Forbes fade away, firstly I worked out a 'paper' called "Deeper Properties derived from the 1-st derivative of the Dark Energy Force Formula". In a different manner the connection between

'dark energy' en 'dark matter' was determined at that time. It marked how the '1-ste derivative' of a 'new dark energy force' reproduced the 'event- and light-horizon' of a black hole. From this result followed how the densities of 'dark'- and 'visible matter' relate. Afterwards I read the magazine Nature[3]. I noticed, that independently of the history of a galaxy, the 'dark matter density' becomes equal to the density of the visible matter density. I also noticed that for 1/4 of the density of 'dark matter' (for a specific length), this result emerges from 1-st derivative of the 'dark energy force formula'. Under these conditions both densities contributed equal to the gravity of a spiral galaxy to keep it in tact. Until then there was no theoretically base for it.

An overview of my 'papers' in the viXra-archive is given in the link:

http://vixra.org/author/dan_visser

[1] http://vixra.org/abs/1206.0028 ("New Dark Matter Cosmology")
[2] Entropy gravitationJHEP04 (2011) 029 door E. Verlinde
[3] Nature 461, 627-628 (Oktober 1 2009) | doi:10.1038/nature08437.