Double Torus hypothesis for the universe.

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Abstract.

The Double Torus, a new hypothesis for the universe, has been put in perspective and related to other theories and hypotheses. This 'paper' could be used by the press. The Double Torus hypothesis is theoretically and mathematically-physics-based. Examples of evidence might be available already.

Introduction.

A new cosmological hypothesis is introduced by Dan Visser, Almere, the Netherlands, who is an independent cosmologist (and Art-painter, DAN). He theoretically derived a (new) formula for dark energy, which also implies a new shape for the universe. The formula he uses, is not the same as the cosmological Einstein-constant. Eventually his (new) dark energy force makes the cosmological constant unnecessary in the Double Torus Universe. He claims evidence is available, theoretical and experimental (astronomically and in Earthy-laboratories), but this urges to reconsider the current cosmology of the Big Bang.

The (new) dark energy force formula DAN derived, involves 'extra-time' from below the Planck-scale. This means the universe could no longer be originated by a Big Bang, because the 'extra time' is additional to the always going forward time-arrow after the assumption of the Big Bang. In DAN's hypothesis the universe has a Double Torus geometry, which exists of an outer-torus of (new) dark energy 'time' that intertwines an inner dark matter torus (fig. 2).

The dark matter within this inner torus is flowing cyclic all the way through the inner-dark matter torus. This redefines vacuum energy-density, as it is assumed in the quantum dynamics. Vacuum energy-density calculated by the conventional quantum dynamics (10^{114} Joule/m^3) is an unexplainable factor 10^{122} too large compared to the one calculated from General Relativity (about 10^{-8} Joule/m^3).This discrepancy is ruled-out by the (new) dark energy force of the Double Torus hypothesis. The argument is, that the (new) dark energy force operates in a larger and differently shaped than the Big Bang.

The hypothesis suggests reality is a cyclic recalculation, which emerges from the two 'extra time' directions that empower the current quantum dynamics. It means DAN introduced a refining of the Planck-time. This implies conventional quantum-entanglement is no longer indivisible. So, the main consequence of the hypothesis is, that the Big Bang doesn't really exists, and is rather an illusion in a recalculated Double Torus Universe. This illusion pops-up as space-expansion in the Big Bang universe. Eventually this is caused by the acceleration generated by the flow of dark matter in the Double Torus. This flow is theoretically based on a faster-than-light changing dark-information at the dark matter torus-surface. He based this on a thought-experiment of 'non-relativistic scaling faster than light'.

DAN's papers are hosted in the vixra-archive since 2009. The evidence matches several observations and laboratory-experiments under restriction of an open mind towards a different interpretation of

the conventional cosmology. In this respect one of his 'papers' claims to reconsider the violation of Relativity by neutrinos, discussed during and after a CERN-affair about neutrinos-faster-than-light in May 2012 and the discovery of the Higgs-like particle.

DAN's set of equations.

DAN is the founder of an evidence-based alternative for the universe otherwise than the Big Bang, highlighted by his 'set of equations' to profile his Double Torus hypothesis[1] . An overview of all of DAN's 'papers' is also available[2].
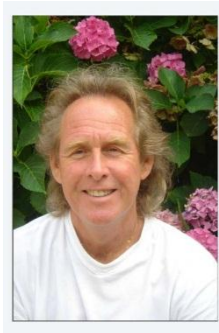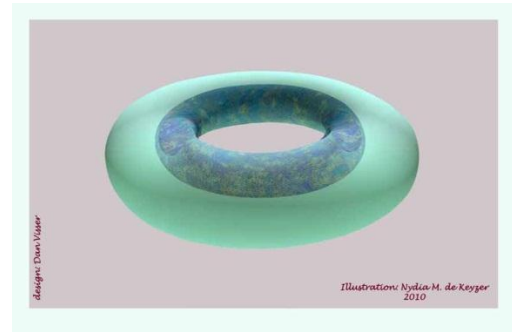

Fig. 1 Dan Visser (1947), photograph 2008.

Fig. 2 Double Torus 2009.

DAN's Dark energy force-formula.

The spindle of the Double Torus hypothesis is a (new) 'dark energy force formula', derived theoretically from DAN's thought-experiment. He named it 'non-relativistic scaling faster than light', which means scaling independent on the light speed. Such a scaling is based on a dark-information-change. His thought-experiment was derived in 2004 and published on April 4 2004 on his website[3].

<u>In its original setting of April 2004:</u>

$F_{de} = - k \cdot m^3 = - (c^5 O_e/2G) \, m^3 \, [(kg.m)^3 N/s]$, with $k = k_{de} \cdot (1/G)$, wherein $k_{de} = c^5 O_e/2$

Since the first paper in 2009 an additional "+"sign became part of the formula. The reason was DAN became involved in a co-operation with Christopher Forbes (UK, PhD-math and physics and Fellow of the Royal Astronomical Scociety). The (new) 'dark energy force-formula' was picked-up from DAN's website by Christopher, and he (and his colleague Keith Lees) found a <u>general mathematical equation</u> for Dan's formula !! So, these results were published on September 1 2009 in a co-operative 'paper' in the Vixra-archive. At that time it was named Twin-Tori Model . Then afterwards DAN published his **'original'** 'dark energy force-formula' in retrospective in the Vixra-archive and many 'papers' of his own hand followed after the contact with Christopher 'faded away'. Remarkably no other archive had been willing to peer-review DAN's formula, and also submission was only possible by involving endorsers. But that was not possible, because DAN developed his formula solitary and outside the institutional walls. In 2011 DAN lost contact with Christopher. After that period he developed the framework on his own, just as he once started, while not being affiliated to any institution. The original plan was, Christopher should developed a *Triple Torus Topology ('triple', because the mathematical boundaries had to determine the physical boundaries, according to Forbes)*, named as the *Forbes-Visser Model (F-V model).* However, the lost-contact between DAN and Christopher

remained. So, at presence, DAN tries to profile the 'Double Torus hypothesis' via his website and the press. The formula became a formula with a "+"and "-" sign.:

$F_{de} = \pm k. m^3 = \pm (c^5 O_e/2G) m^3 [(kg.m)^3 N/s]$, with $k = k_{de} .(1/G)$, wherein $k_{de} = c^5 O_e/2$

Moreover DAN's formula was supported by the general mathematical expression of Christopher Forbes :

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

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

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

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

For $\alpha = G$, $\beta = 0$, follows for $\gamma = -1/4 \, c^4 \, \hbar^2 \, M^6 \, G$ (which is the total amount of dark energy in a Double Torus universe) the $x = \pm 1/2 .c^5 m^3 G^{-1}(L_{Planck})^2$

The x is identical to DAN's physics-math-formula, wherein : $O_e = (L_{Planck})^2$, as follows:

$F_{de} = \pm (c^5 O_e/2G) m^3$, but DAN also derived the dimension in $[(kg.m)^3 N/s]$, because of his math-physics notations.

After further solitary research DAN presented a new setting of his formula.

The setting of January 2013:

$F_{de} = F^G{}_N . \pm F_{dm} \, [(m^8/s^3)]$, which is identical to $F_{de} = F^G{}_N \, [m^2] . \pm F_{dm} \, [(m^2/s)^3]$

Where k'_{de} is the acceleration in $F^G{}_N$ and $\pm F_{dm}$, with $k'_{de} = (k_{de})^{1/2} = (c^5 O_e/2)^{1/2} \, [m/s^2]$

The dark matter force is $F_{dm} = \pm m^2{}_{dm} . (k'_{de})^{1/2} [(m^2/s)^3]$.

In these notations 'F' stands for 'force', whereas the index 'N' and 'G' means 'Newton' and gravity; the index 'de' means 'dark energy', the index 'dm' means 'dark matter' and the expression between '[..]' expresses the 'dimensions in meter and second'. The term (m^3) is a combination of visible- and dark matter mass, which originally was already split-up in Dan's paper[4] .

Dark flow, the Higgs and Neutrinos.

The (new) dark energy formula tells us the Newton-Gravity-force is powered by a 'force of dark matter'. The interpretation thereby is, that the 'dark matter force' can be gravitational (+), or anti-gravitational (-) !! The dimensional aspect also tells us the 'dark matter force' is a 'surface-flow'. This 'flow' is 'circular-torus-like' and therefore causes expansion, or contraction of the dark matter torus'. A dark flow is really observed in astronomy.

Another issue is, if DAN listens carefully to his hypothesis, the 'Higgs-like signal', which was measured in July 4 2012, should be in fact the presence of the (unknown) 'dark matter force'. This is different

from the current interpretations of the held experiments, which consider the 'Higgs-theory' to break symmetry of primordial forces after the Big Bang. In the more popular explanation one often says, the Higgs-field is a 'syrup-like field' (like 'molasses'), through which elementary particles get their mass. But DAN's formula clearly shows that a 'dark matter force' also generates anti-gravity!! In that aspect it differs from the cosmological Einstein-constant, because of its negative mass. This is rather unconventional, but still the formulas tell such a truth.

The reason DAN thinks a re-investigations has to take place on the neutrino-faster-than-light phenomenon is necessary, is because he calculated the faster neutrinos on 62 nanosecond faster than light, just as was published after the experiments in September 2011. Although this was rejected again after the CERN-affair in May 2012, DAN pointed out that this violation of Relativity only happens when the dark matter force is larger than the Newton-gravity at the scale of 10^{-22} meter[5]. Or an older 'paper'[6].

New perception on cosmology.

The background of DAN's theoretical research was inspired by increasing opinions (arguments), that the truth of the Big Bang is under fire: Because the chance on a 'good' cosmic inflation is extremely small, which means everything could be possible. So also, nothing is possible!! These analyses were made by several good-qualified theoretical and mathematical scientists, such as Penrose, Steinhardt and Turok (and many others). However, the current astronomy- and lab-technology limits the observations to a 'flat universe' of the Big Bang and in such a universe the assumption of (unknown) dark energy still is made with the 'cosmological Einstein-constant'. This makes us believe the acceleration of space-time expansion is related to that constant . But also dark matter has not yet been understood and not yet detected as particles in earthy-labs.

Following DAN's (new) equations, the universe could be very well have the shape of a Double Torus of dark energy and dark matter, both existing as a torus in a torus: One inner-dark matter torus 'flowing' through the outer dark energy-time torus. The 'two extra time-arrows' (from below the Planck-scale) refine the Planck-time in the quantum-dynamics. That is the reason DAN's framework implies the Big Bang could be replaced by a 'cyclic' dark matter-flow in a 'Double Torus geometry'. This recalculates the reality. These dynamics cause the accelerations in three directions all the way through the 'Double Torus'. This gives us a false idea of an accelerated space-expansion in the Big Bang Universe. This is why DAN says "the Big Bang is an illusion!!"

Dan Visser's thought-experiment, 'Non-Relativistic Scaling'.

The idea for the Double Torus perception was born after Dan Visser's thought-experiment of April 4 2004. He used 'non-relativistic-scaling', which in this respect means 'scaling faster than light'. He started with Hawking's prediction of 1974, which mathematically proved a large black hole could evaporate very slowly, while the smallest black hole, a Planck-hole, would evaporate in a flash !! DAN came up with the idea this might release 'extra time'. He created a conceptual form for this assumption by his 'scaling-away principle' (scaling away from each other a small- and large black hole, while an observer had to be capable of receiving equal amounts of evaporation-radiation from

both black holes at the same time). He combined this by melting together both black holes too, and translated that in a temperature-relation for an observer to detect.

Detailed analysis.

Hawking stated the evaporation-radiation was assumed to be thermic-radiation, but DAN preferred to name it 'dark information'. Not without reason, because his (faster) non-relativistic 'scaling-principle' changed the 'dark-information' at the surface of both black holes. The 'scaling away-principle' (defined with a "-" sign), combined with melting together both black holes, would then initiate a (faster) 'non-relativistic (new) force'. This (new) 'force' should represent directly that 'dark-information-change'. From the combination of both principles he got two equations, with one unknown parameter: the 'dark-information-change' . So, substitution of related temperature to that change, would be the solution to mark the dynamics of that 'dark information'. He named this a (new) 'dark energy force'. This should comprehend a 'time-force' which should refine the Planck-time, just because of the (faster) speed principles related to a movement defined by (faster) 'non-relativistic scaling'. Then he translated these principles in a mathematical exercise (DAN's thought-experiment). The result was the(new) 'dark energy force-formula'[7]. This formula covers the dynamics of small mass-particles (positive mass), anti-particles (positive mass) and particles with negative mass.

Other theories and hypotheses.

It took a long time before the force of gravity for small particles and anti-particles were planned to be exposed to General Relativity in experiments. Fortunately such an experiment is coming-up in 2014, named AEGIS (CERN). It will try to prove, whether positive anti-matter can cause anti-gravity. The AEGIS-experiment will have a look at the prediction, whether anti-matter is falling-up or falling-down, a prediction that is made in the Elementary Process theory of M. Cabbolet (VUB-BE)[8], who used an axiomatic system, showing mathematically 'what might be not known in physics'. DAN thinks AEGIS might also prove the existence of a (new) 'dark matter force', wherein the existence of anti-gravity by negative dark matter-mass could be revealed. DAN's framework also relates to an issue, which is described in the Entropy-Gravity theory of E. Verlinde (UVA-NL)[9], who followed the 'correspondence principle' ('using what is known from before in physics'). Verlinde derived a formula for an oscillating Planck-constant. Graig Hogan (USA-Fermi-lab)) investigates experimentally, whether the Planck-scale has a deeper level of dynamics. So, DAN's Double Torus hypothesis mainly could be best related to both other hypotheses, although his hypothesis is more detailed about the divisibility of the Planck-time. When compared to string-theories (five dual in M-theory) and loop-quantum-gravity, DAN's hypothesis is fundamentally different. In DAN's hypothesis 'time' is 'extra' and thus refining quantum-dynamics, which is not the case in the string-theories (there extra space is used and still the one Big Bang time-arrow). The prediction of a multiverse follows only from the combination of quantum-dynamics and possible cosmic inflation scenarios. More closer, but still different from DAN's hypothesis, is loop-quantum-theory, which predicts a 'bounce' after a former universe, ruled by quantum-fluctuations in between the moment of Big Bang and cosmic inflation. Therein time reverses and space is turned inside-out. In some respect this also suggests a cyclic process, but it is more like a 'linear cyclic' process. Just as it is in the proposal of the Conformal Cyclic Cosmology of R. Penrose, which suggests a universe without cosmic inflation[10]. In the CCC-

cosmology the time-arrow continues going forward. That is not the case in DAN's hypothesis. The cyclic process in the Double Torus hypothesis is a curved one in time.

References.

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