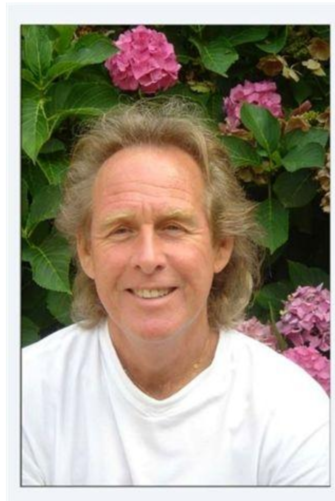
Thought-experiment provides a formula for (new) dark energy force.



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Publication-dates: Version-1 was submitted in October 7 2010, in retrospective to the first paper of Dan Visser and Christopher Forbes in the Vixra-archive about a possible new cosmology. However, since version-1, a textual revision was needed after the publication of several new papers by Dan Visser only, in order to get a better explanation without altering the mathematical content of the original 'dark energy force-formula'.

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Abstract.

A (new) 'dark energy force-formula' was introduced on April 10 2004 on Dan Visser's website [1a]. His (new) formula was picked up by a PhD-mathematician and -Physics, Christopher Forbes (UK) in the summer of 2009, leading to email-contact among them, and resulting in a publication of a general mathematical expression, whereof Dan Visser's (new) 'dark energy force-formula' came out as a solution[2]. The derivation of this (new) force was then published in the Vixra-archive on October 7 2010 (in retrospective). The 'thought-experiment' is described as a mathematical exercise, which in the end is expressed as his (new) 'dark energy force-formula'. Since then only textual changes were made for the benefit of a better explanation of the hypothesis, without altering the original mathematical content. The main issue in the 'thought-experiment' is a 'non-relativistic scaling principle', characterized as 'scaling-away' two black holes from each other (small and large), as well as 'melting them together'. Both 'movements' presents a 'change of dark information'. This was further analyzed, synthesized, combined and translated mathematically by Dan Visser, into a force of 'extra time' hitting an observer's eye. The result is the (new) 'dark energy force', a 'non-relativistic force'.

Preface.

Dan Visser came forward with a ‘thought-experiment’ published on his website April 10 2004, which revealed a (new) ‘dark energy force-formula’. He claimed the (new) force is a non-relativistic-force, which means the ‘force’ extends General Relativity and hence might extend cosmology towards a new geometry for the universe: He named this: ‘Double Torus hypothesis’. In this hypothesis dark energy and dark matter have a new meaning compared to dark energy and dark matter in Big Bang cosmology. The (new) dark energy is characterized by ‘extra time’ from below the Planck scale, additional to the always going-on time-arrow after the beginning of the assumed Big Bang, while the (new) dark matter is characterized by super-small spinning space-disc-like particles (at a scale of about 10^-22 meters) in vacuum, flowing all the way as an inner ‘dark matter torus’ in a cyclic manner, enclosed and intertwined by the ‘dark energy-time’ torus. Since the hypothesis appeared in the Vixra-archive, it was named as ‘Twin-Tori Model (TTM)’, but after several ‘papers’ from Dan Visser on this subject, his proposal is to speak about ‘Double Torus hypothesis for cosmology’.

Introduction.

The revision of version-1 of October 7 2010 is made, because of only a better text-explanation about the ‘thought-experiment’. The fundamental mathematical derivations are unchanged and still actual. My thought-experiment was described in April 4 2004 and put on my website on April 10 2004.

I started with Hawking's prediction of 1974, which claimed a large black hole could evaporate very slowly and a small black hole, called a Planck hole, which is the smallest possible black hole in Big Bang cosmology, would evaporate in a flash. I had a faint idea such a process might introduce 'extra time’. So, I started writing my derivations, and that became ‘my thought-experiment’.

I combined the ‘scaling-away from each other’, of 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. Although the evaporation-radiation was assumed to be thermic-radiation, I had a the idea it should be named as 'dark information'.

In my vision the ‘scaling-away principle’ changed the 'dark-information' at the surface of these black holes. However, I needed another ‘movement’ to get the ‘same change’ of dark information’. This in order to have two equations with one unknown parameter, the ‘dark information-change’. So, I ‘melted them together’, which was in principle the same as ‘scaling-them-away’ related to the change of ‘dark information’ in the observer’s eye.

The 'scaling away-principle’ (defined with a "-" sign) was an initiation of a ‘non-relativistic (new) force’, which could be related to a 'dark-information change’. So, I translated this ‘thought-experiment’ in a mathematical exercise. The substitution from the one principle into the other, could mark that 'dark information-change'. This could also be considered as ‘(new) dark matter’ and ‘(new) dark energy’, however, then emerging from a 'non-relativistic force'. So, I named the '(new) force: (new) 'dark energy force'. It was a different force from the cosmological constant, being dark energy to accelerate space-time in Big Bang cosmology, because the 'melting-together' and 'scaling-away principle' were related to a ‘movement in ‘non-relativistic-time’. ‘Hence, this would result in a ‘time-force’. But such an ‘extra-time’ could not be the same as the always going-on time after the Big Bang. Due to the ‘non-relativistic (mathematical) movement’, the release of two 'extra time-directions' should occur in my vision, because I used two ‘principles’ of ‘equal relevance’. This would mean 'time' should be extended from a smaller scale then was usually described before. The ‘time-extension’, however, should also lead to the introduction of a wider universe.

Then the ‘non-relativistic force-formula’ was picked-up from the internet (from my website) by Christopher Forbes (UK) in the summer of 2009. He identified himself as a British PhD mathematician and physicist (also Fellow of the Royal Astronomical Society). Soon he came forward with a general mathematical equation, whereof my (new) ‘dark energy force formula’ appeared to be a solution! However, moreover, two extra solutions showed-up: Firstly my dark energy force formula appeared to have a “+” sign too, which I had not recognized during the exercise of my thought-experiment; That would be the one that had to be related to a ‘getting-closer principle’ as a second possibility of ‘non-relativistic scaling’.

Secondly: An amount of (new) dark energy was included in the general equation. So, we decided to publish the results in the Vixra-archive in co-authorship. That publication was of September 1 2009, followed by two other publications in co-authorship. The rest of the publications afterwards, I did on my own.

The publications convinced me of additional theoretical evidence for the existence of a wider universe than the Big Bang. However, although my website already comprehended the derivation of my (new) ‘dark energy force formula’, I also decided to publish my ‘dark energy force formula’ in the Vixra-archive (in retrospective) in order to synchronize our actions: Reference: http://vixra.org/abs/1010.0013).

Afterwards many papers of my own hand followed, because my contact with Christopher Forbes 'faded away slowly' (since 2010, ending in 2011). One of his last messages gave me still hope he would be the one to formulate an extensive mathematical framework, called the *Triple Torus Topology* ('triple' because mathematical boundaries should determine the physical boundaries), or the *Forbes-Visser Model (F-V model).* However, until now I have never heard of him since. So, in spite of the ‘communication-stop’ with Christopher Forbes, I continued in formulating different analysis. At some point I came forward with a 'set of equations' and ‘calculations’. These may best summarized as follows:

I use a formula for ‘new dark energy in a new cosmology’. This is part of my framework of the Double Torus hypothesis, wherein a new dark energy force-formula comprehends the force of Newton-gravity in a product with the force of dark matter at scales of about 10^-22 meter. This also supports the existence for repulsive gravitational behavior. I mathematically derived this on my own, partly from heuristic insights, and independently developed from the institutional network. However, in my framework the dark matter force has two faces: force by –mass (repulsive) and +mass (attractive), which exists at a refined time when crossing the borders of the Planck-scale. My formula emerged from a thought-experiment of non-relativistic scaling. And it works. I solve i.e. the discrepancy of the vacuum energy density in Big Bang cosmology by using calculations from the new dark energy force formula directly as well as a calculation based on the ratio of the new dark energy force and the new dark energy amount in the Double Torus framework. This also shows me a connection of visible- and dark matter in vacuum and the possible existence of a new energy source by using my formula. Some other experiment-related-puzzles are also re-high-lighted and resulted in unexpected insights, such as neutrino-behavior related to light-speed and detection of dark matter instead of Higgs.

So, I scaled away' from each other two differently sized black holes, a small and a large one, in order to obtain an equal amount of evaporation-radiation from both, in order to make possible a simultaneous detection by one observer. The evaporation-radiation exists of Hawking-radiation, which is related to S=¼ A; S is the entropy and A the amount of Planck-surfaces. The Hawking-radiation is thermic.

Quantum-dynamics demands that information can never been lost in the universe, even after having been disappearing in black holes. Although this is acknowledged by theoretical analysis, it is a paradox to some scientists. However, new mathematics in loop-quantum-gravity also postulates that the forces in the atom forbid the forming of singularities (a singularity is just an infinite small point with an infinite large energy).

This means that 'fundamental information' should be maintained in the universe. However, whether this is a paradox or not, it is not relevant in the first place for this 'thought-experiment'. The purpose was to "scale-away" black holes. This kind of 'thought-experiment', however, needs a new dynamical action, which I named: "dark energy force". This is a non-relativistic force. This kind of 'dark energy force' might reveal sub-quantum-information being 'fundamental information' for 'time', and that can never been lost. ('sub' in this context means: information from below the Planck scaled). At a later state of the development of the TTM I called this "i-formation" ("i" means 'induced'). The 'induced-formation' is suggesting a formation of refined time, which enables quantum-dynamics to be less uncertain.

The only fundamental way to measure 'scaled away black holes from each other', is by 'temperature'!! We are also used to do this with light. Every light-wave has its own typical temperature. However, Hawking-radiation is rather difficult to observe. So, I used a typical 'thought-experiment', which is based on a 'refined chance-principle' connected to 'temperature' for the whole system.

From historical perspective energy-movement was observed as 'going from warm to cold areas', but new insights learned that 'lost information' was defined at the surfaces of event-horizons of black holes. More 'lost-information' inevitably would lead to a higher entropy (S). Hawking derived this as $S=4(pi)m^2$, where (m) is the mass of the black hole. This can be re-written, as follows:
The surface of a globe is $A=4(pi)r^2$, with r=2m, where r is the radius of the event-horizon. The result becomes $A=4(pi).(2m)^2=16(pi)m^2$. Comparing this with $S=4(pi)m^2$, we find **S=1/4 A** (where A is the amount of Planck surfaces). However, entropy must be without dimensions, so (S) must be divided by the elementary Planck-surface O_e.
Meanwhile the event-horizon of a black hole becomes smaller, due to the evaporation of its

surface. Small black holes evaporate faster and more intensively than large ones. The temperature of the black hole (T_s) is proportional to the gravity of a black hole: $T_s \sim F_z \sim m/r^2 \sim m/m^2 \sim (1/m)$.

Starting the 'thought-experiment'.

I took the following *product:*

[a light-way (ct) from myself up to the light-horizon of a black hole] x [the distance (s = 0,5 r_s) from the light-horizon up to the event-horizon of the black hole in order to "observe" the evaporation of two black holes simultaneously (large and small) through a kind of entanglement within the observer].

It is not possible to look beyond the light-horizon of a black hole, but still there must be an unknown chance to observe this, and even a more deeper chance.
This "chance" is (ct).(s) / (ct) + (s). However, within a black hole the total of comparable chances are (ct) + (s) = 1, so the chance will be (ct).(s). This could carry out "more detailed chances" than is known from quantum mechanics.

Therefore I relate the "temperature" to this chance (ct).(s):
$T_s \sim ct \,.\, 0.5\, r_s$ (1)

However, this chance must be also combined with $T_s \sim 1/m$ to connect with the temperature of a black hole as a complete physical system. The result is:

$T_s \sim (ct.\ 0.5\ r_s).\ 1/m$

From this follows:

$ct \sim (2\ m/r_s).\ T_s$

From this follows:

$ct \sim 2.\ (1/2.c^2/G)\ .\ T_s$
$ct \sim c^2/G\ .\ T_s$ (2)

According to $S=4(pi)m^2$, the entropy S at the surface of a black hole is proportional to m^2. This means as soon as two equally sized black holes form one black hole, the event-surface becomes 2x larger, while the mass only increases with a factor $2^{1/2}$. I call this effect 1, which propagates $(2 - 2^{1/2})$ m = 1.4 m. This affects (ct) to the observer.

Intermezzo:
On the other hand this effect leads to a specific analysis of dark energy and dark matter. I call this: effect 2. I take the ratio of the black hole surface A and the black hole mass m, defined as A/m. This ratio A/m is constant for as well a single black hole as for two black holes put together. According to the afore effect 1, the ratio becomes larger with

a factor 1.4, only if the two black holes are put together. Compared to the original ratio then follows: 1.4 (A/m) - A/m = 0.4 =40%. This 40% had to escape via the black hole surface, leaving behind 60% in the larger black hole. The escaping energy must be dark energy with an anti-gravitational property. So, an anti-gravitational dark energy 40/60 = 2/3 stays connected to the combined black holes. Consequently 1/3 must be identified as dark matter with a gravitational property.

Conclusion: The basic ratio of darke energy / dark matter is defined as 2 : 1. This means 66% is dark energy and 33 % is dark matter. The fact that nowadays 73% dark energy is observed (calculated) and 23% dark matter (observed and calculated) is due to an unkwown dynamic in the big bang. This includes that the big bang also might be part of another cosmological model.

Back to the effect 1, this results in:

$$ct \sim m.(2 - 2^{1/2}) \tag{3}$$

Now both sides in expression (3) are divided by r_s (the Schwarzschild-radius):

$ct/ r_s \sim (m/r_s).(2-2^{1/2})$ and because m/r_s can be rewritten in 1/2 (c^2/G), the result is:

$ct/ r_s \sim 1/2\ (c^2/G)\ .\ (2-2^{1/2})$

$ct/ r_s \sim c^2/G - \{(0.5\ .2^{1/2}).\ c^2/G\}$

$c^2/G \sim ct/ r_s + \{(0.5\ .\ 2^{1/2}).c^2/G\}$

substitution in 2 results in:

$$ct \sim \left\{ \frac{ct}{r_s} + \frac{(0.5\ .2^{1/2}).c^2}{G} \right\} . T_s$$

$$ct \sim \frac{T_s\ ctG + r_s\ T_s\ (0.5\ .2^{1/2}).c^2}{r_s\ G}$$

$$ct \sim \frac{2T_s\ ctG + r_s\ T_s\ c^2\ 2^{1/2}}{2r_s\ G}$$

$2\ r_s\ G\ ct \sim 2T_s\ ctG + r_s\ T_s\ c^2\ 2^{1/2}$

$2\ r_s\ G\ ct - 2T_s\ ctG \sim r_s\ T_s\ c^2\ 2^{1/2}$

$2t\ (r_s\ G\ c - T_s\ c\ G) \sim r_s\ T_s\ c^2\ 2^{1/2}$

$$2t \sim \frac{r_s\ T_s\ c^2\ 2^{1/2}}{r_s\ G\ c - T_s\ c\ G}$$

$$t \sim -\frac{r_s\, T_s\, c^2\, 2^{1/2}}{2\, G\, c\, (r_s - T_s)} \qquad (4)$$

This is time (t) to observe evaporation-radiation from both black holes. Whether this is a large or small black hole depends on r_s and T_s. For $r_s >> T_s$ (which is a large black hole) follows:

$$t \sim \frac{0.5\, c\, 2^{1/2}\, .T_s}{G}$$

The restriction means: $r_s = 2mG/c^2 >> T_s$, so, $m >> 0.5 . (c^2/G) . T_s$.
But because $T_s \sim 1/m$ than follows $m >> 0.5 . (c^2/G) . 1/m$.
So, than the restriction changes in :
$m^2 >> 0.5 . (c^2/G)$ which means $m^2 >> 0.5 \quad .1.36 \quad .10^{27} >> 0.068 . 10^{28}$
This means one sun-mass of 2.10^{30} [kg] imagined as a black hole, is a large black hole. The time (t), with the restriction of $T_s \sim 1/m$, results in:

$$t \sim \frac{0.5\, c\, 2^{1/2}}{mG} \qquad (5)$$

The dimension is $[m/s] /\{[kg].[m^3/kg.s^2]) = [s/m^2]$.
So, to translate time in seconds (this means to enable observation in reality), a multiplication is necessary with the unity of a black hole-surface, which is an elementary surface quantum O_e [m²]. From this follows:

$$t = \frac{0,5\, c\, 2^{1/2}}{mG} . O_e \; [s]$$

O_e can be replaced by $(L_{planck})^2 = hG/c^3$

$$t = \frac{0.5\, c\, 2^{1/2}}{mG} . \frac{hG}{c^3} \; [s]$$

From this follows:

$$\mathbf{t = 0.5\, .2^{1/2}\, . \frac{h}{mc^2}\; [s]} \qquad \mathbf{(6)}$$

So here is the time to have a unknown chance of observing radiation of a large black hole. This is determined by Planck’s constant (h) and Einstein’s energy E= mc². This was expected. Then the other restriction $r_s << T_s$.
Now I define time as (t'), because in principle, it is different from time (t).

Then starting again from formula (4):

$$t' \sim \frac{0.5\ c\ 2^{1/2}\ r_s\ T_s}{G\ (r_s - T_s\ )}$$

Now the case is: r_s is neglectable to T_s (a small black hole):

$$t' \sim \frac{0.5\ c\ 2^{1/2}\ r_s\ .T_s}{G\ .\ (-\ T_s\ )}$$

$$t' \sim -\ 0.5\ r_s\ .\ \frac{c\ 2^{1/2}}{G}$$

In this I substitute $r_s = 2mG/c^2$.

$$t' \sim -0.5\ .\ \frac{2mG}{c^2}\ .\ \frac{c\ 2^{1/2}}{G}$$

$$t' \sim -\ \frac{m\ 2^{1/2}}{c}\ [kg]\ /\ [m/s]\ =[(kg/m).s]$$

Again (t') must be expressed in seconds, but now for a small black hole.
So, it must be divided by *the dimension of mass-density [kg/m*]. But by what value?
The is this: a small black hole exists, when a Planck-mass and light, are both present at the same time, so $(hc/G)^{1/2}$ [kg] . c [m/s] is actual. Moreover the Planck-mass is defined at the Planck-length, so also (1/c). $(hG/c)^{1/2}$ .c [m.(m/s)] = $(hG/c)^{1/2}$ [(m/s).m] must be actual.
To get a volume [m^3] of a small black hole per second, $(hG/c)^{1/2}$ [(m/s).m] must be taken per 1 m/s, or multiplied by 1 [s/m].

The result is $(hc/G)^{1/2}$ [kg] / {$(hG/c)^{1/2}$ [(m/s).m] .1 s/m}]= $(hc/G)^{1/2}$. $(hG/c)^{-1/2}$ = c/G [kg/m]. So, to get the time (t') for a small black hole, there must be divided by c/G [kg/m], or multiplied by G/c [m/kg]. This will express (t') in seconds. The result is:

$$t' = -\ \frac{m\ 2^{1/2}}{C}\ .\ G/c\ [s]$$

$$\mathbf{t' = -\ \frac{m\ G\ 2^{1/2}}{c^2}\ [s]} \qquad \mathbf{(7)}$$

Now the time to observe a small black hole is determined by G and c^2 , while m must be negative to get positive time. This defines my information sub point-particles in my dark-field, where -m is the returned-information of small black holes.

After having found two time-durations for observing a small and large blackhole, I introduce the duo-time factor, called DQT-factor, which means both time-durations will be connected. The 'Q' stands for a detailed chance below Quantumlevel.
I have found two times (t) en (t'), which connect to E x t' working opposite to E x t .

The result is:

$$DQT = -\frac{G\,2^{1/2}}{c^2} \,.\, m.\ 0.5\ .2^{1/2} \,.\, \frac{h}{mc^2}$$

This can be rewritten:

$$DQT = -\frac{G\,c\,2^{1/2}}{c^3} \,.\, m.\ 0.5\ \ .\ 2^{1/2} \,.\, \frac{h}{mc^2}$$

This makes possible to replace (hG/c^3) [m^2] in O_e [m^2]. So than follows:

$DQT = -\ m\ .\ O_e\ .\ c.\ 1/mc^2$
$DQT = -\ O_e\ /c$ [m.s] **(8)**

Intermezzo: Could both times ever be equal to each other? No ! Accept in an empty universe, or a universe which hasn't started yet. I will show this:

$$-\frac{G\,2^{1/2}}{c^2} \,.\, m = 0.5\ .2^{1/2} \,.\, \frac{h}{E}$$

$$0.5\ .2^{1/2} \,.\, \frac{h}{mc^2} + \frac{G\,2^{1/2}}{c^2} \,.\, m = 0$$

$$\frac{0.5\ .2^{1/2}\ .\ h\ .\ c^2 + Gmc^2.\ 2^{1/2}}{c^2\ mc^2} = 0$$

$$\frac{c^2(0.5\ .2^{1/2}\ .\ h + Gm.)\ 2^{1/2}}{c^2\ mc^2} = 0$$

$$\frac{2^{1/2}\ (0.5h + Gm^2)}{mc^2} = 0$$

With the restriction of $Gm^2 >> 0.5h$, or let us say $Gm^2 >> hc$, or $m^2>>hc/G$, or $m^2>> m^2_{Planck}$ this is giving the following derivation:

$$\frac{2^{1/2}\, Gm^2}{mc^2} = 0$$

$$\frac{2^{1/2}\, Gm^2}{mc^2} = 0$$

$$\frac{G\, 2^{1/2}}{c^2} \,.\, m = 0$$

This can only be for m = 0. Thus only both times can be equal if there are no masses. This means both times are only equal for small black holes, which loose all their radiation. Under these circumstances there are no blackholes to give radiation.
And in the other case:

$$\frac{2^{1/2}\,(0.5h + Gm^2)}{E} = 0 \text{ , with } Gm^2 << 0{,}5h\text{, follows:}$$

$$\frac{0.5\,.2^{1/2}\,.\,h\,[J.\,s]}{E\,[J]} = 0\,[s]$$

In this expression there is energy E in the dimension [J], so in the expression $0.5\ .2^{1/2}.\ h$ [J. s] = 0 only the time can be 0. If E=0 and the time is finite, than the result would be infinite, but that is not the case, it is 0. So “the time dimension must be = 0”, and that means the universe had not yet started. *Anyway this also proves that the universe had a finite energy before it started***.**

Now I continue:

Both times cannot be equal to each other. It always demands a DQT-factor to be a product, which gives an unknown chance to observe the radiation after a time (t') and (t), for a small and large black hole. I substitute the DQT-factor in the product of energy and time: U = (E x t) . (E x –t’) = E^2 . t.-t’ = E^2. DQT = E^2 . - O_e /c [J^2.m.s] =[$(J.s)^2$.m/s].
Those two forms of "energy x time", symbolize the 100 % unknown chance of observing a large and small black hole simultaneously. This co-existence of two different black holes in one moment, means: Obtaining an energy (U) for one black hole, for which (U) has to be

divided by 2, as follows:

$U = 0.5 . E^2 . - O_e /c = E^2 . - O_e /2c$ [J².m.s] =[(J.s)².m/s]

The energy (U) is a temporal energy from below quantum-scale, because the source of the energy is normally from inside the black hole. Therefore (U) has anti-gravitational features. Thus, to get a real presentation of the new energy, I have to accept the existence of E and U together at "the same time".
In other words: The Cosmos exists of having a chance to be involved with Einstein's energy and the returned information from an unknown energy force. This is resulting in the next equation:

$U_u = E . U = mc^2$ [J]. $E^2 . - O_e /2c$ [J².m.s]

This introduces:

My dark energy force formula:
$U_u = - 0.5 . E^2 . mcO_e$ [J³. m.s] = [(J.s)³.m/s²] = [(kg)³.m⁷/s⁵] **(9)**

In this formula $E^2 = E^2_{kin} + E^2_0$ is embedded. There is also a dark matter impulse (mc) as part of a dark matter flow (1/2 mc O_e) [kg.(m³/s)]. In total the sign is "-", which means there is a repulsive gravitational property: dark energy force.

The dimension [(J.s)³.m/s²] shows a three dimensional spin (J.s), which accelerates (m/s²). This represents a force in a torus geometry of dark energy and dark matter.

Moreover, my formula can be rewritten furthermore in:

$U_u = -0.5 . E^2 . mcO_e$ $[(kg)^3.m^7/s^5]$
$U_u = -0.5\ m^3c^5O_e$ $[(kg^3.(m^3/s)] . 1\ [m^4/s^4]$
$U_u = -0.5\ m^3c^5O_e$ $[(kg^3.(m^3/s)] . 1/G$ [N]
(10)

From this follows:

dark energy force formula:
$U_u = - (c^5O_e /2G) . (m)^3$ [(kg.m)³.N/s] (11)

Here c is the light-speed, G is the Newton-constant, $O_e = (L_{planck})^2$ and m is mass.
Control of the dimensions:

$\{[m^5/s^5] . [m^2]\} / \{[m^3] / [kg.s^2]\}\ [kg^3] = \{[kg^3]. [m^7/s^5]\} . \{[kg.s^2] / [m^3]\} = [kg^3]. \{[kg] . [m^4/s^3]\} = [kg^3]. \{[kg] . [m/s^2]. [m^3/s] = [kg^3]. N . [m^3/s] = [kg^3 . m^3] . [N/s] =$
$[(kg . m)^3] . (N/s)]$

References:

[1] "Thought-experiment and formulas" are designed and owned by Dan Visser, Almere, Netherlands, First published on April 10, 2004 in my website [1a]
Text modifications were made on July 18 2004, September 18, 2005 and March 31 2008, April 5 2008 and April 19 2008, September 28 2008, September 21 2010, September 28 2010 and October 7 2010. Dan Visser, email dan.visser@planet.nl ;

[1a} website www.darkfieldnavigator.com

[2] 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'.

Note: At the time that I wrote my mathematical analysis down, I had no program for writing formulas. So I did this in a word-manner.