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To the
Trade magazines and newspapers
of physics, etc.

-

The new universal constant $\boldsymbol{\imath}$ (iota)

Dear Ladies and Gentlemen,

I am submitting the attached work on the universal constant $\boldsymbol{\imath}$ for review and possible publication, free of charge. If you have any objections, please check:

$$\boldsymbol{\imath} = \frac{m_{pl}}{a_{pl}} = \frac{A_{pl}}{G} = \frac{h}{c^3} = 2{,}459 \cdot 10^{-59} \frac{kg\, s^2}{m}$$

$$m = \boldsymbol{\imath}\, a$$

If it meets your requirements for publication, I would be grateful for a specimen copy.

In case other examinations and decisions are required, please inform by a short E-mail.

It is up to you, to publish the main part only.

Sincerely

Thomas Hettich

Villingen, 2021

Investment:

The new universal constant $\boldsymbol{\imath}$

The theory of the universal constant $\boldsymbol{i}$ (iota) deriving from the Gravitational constants and the Planck variables m_{pl}, A_{pl} and a_{pl}

$$\boldsymbol{i} = \frac{m_{pl}}{a_{pl}} = \frac{A_{pl}}{G} = \frac{h}{c^3} = 2{,}459 \cdot 10^{-59} \frac{kg\, s^2}{m}$$

$$m = \boldsymbol{i}\, a$$

In order to achieve real progress it is necessary to discover a new fundamental natural constant.[1]

A) main part

1st constant $\boldsymbol{i}$

There are small, smallest and also numerical particles which can be determined by the new constant $\boldsymbol{i}$. The two Newtonian force equations [2] are pre-conditional for the derivation of $\boldsymbol{i}$ are:

$$1)\ m_1 a = G\frac{m_1 m_2}{r^2}$$

from which Newtonian gravitational constant [2] can be derived:

$$2)\ G = \frac{a\, r^2}{m_2}$$

The empirical derivation of the gravitational constant is either based on the principle of the gravitational rotary balance [2] or through the Kepler constants [3] by means of a central mass. The gravitational constant is transformed into two ratios, among other things.

$$3)\ \frac{r^2}{G} = \frac{m}{a}$$

The Planck area ($A_{pl} = r^2$) and the gravitational constant on the left-hand side are inserted into these relationships. On the right-hand side as a ratio are the Planck mass and the Planck acceleration. Every derivation from the gravitational constant must have its universal validity and lead to a new law. Dirac's assumption that this is a variable gravitational constant has not been proven. The universal constant i results from the setting of the Planck units in the ratios of Number 4).

$$4)\ \boldsymbol{i} = \frac{A_{pl}}{G} = \frac{m_{pl}}{a_{pl}}$$

Since equation 4) is a universally valid law, the reference to the new iota $\boldsymbol{i}$ constant is available by the insertion of the Planck units. This provides the mass quantum level (10^{-59}) in connection with the gravitational constant. The new constant $\boldsymbol{i}$ is derived.

$$5)\ \boldsymbol{i} = \frac{A_{pl}}{G} = \frac{G\, h}{G\, c^3} = \frac{h}{c^3}$$

$$6)\ \boldsymbol{i} = \frac{m_{pl}}{a_{pl}} = \frac{\sqrt{\frac{hc}{G}}}{\sqrt{\frac{c^7}{hG}}} = \frac{h}{c^3}$$

$$7)\ \boldsymbol{i} = \frac{h}{c^3}$$

If the equations of numbers 5) and 6) are derived from the Planck units, then equation number 8) is derived from the classic cases of the de Broglie relationship in conjunction with $\boldsymbol{i} = \frac{m}{a} \rightarrow \boldsymbol{i} = \frac{m t_{dB}^2}{l_{dB}}$ in reverse acceleration shown and derived. This means that the $\boldsymbol{i}$ constant results with each mass multiplied by the throughput time squared with the divided shaft length assigned to the mass (see No. 8)

$$8)\ \boldsymbol{i} = m\frac{\frac{h^2}{m^2c^4}}{\frac{h}{mc}} = \frac{h}{c^3}$$

$$9)\ \boldsymbol{i} = \frac{h}{c^3} = 2{,}459 \cdot 10^{-59}\ \frac{kg\ s^2}{m}$$

Out of line 10.) a mass resulting from the universal constant related to the Planck unit and an acceleration.

$$10)\ m = \boldsymbol{i}\, a$$

The smallest iota mass quantum initially forms numerically determinable individual quantities. The universal new constant generates micro, small and particle masses depending on the acceleration. The maximum accelerations achieved on earth are $a \approx 10^{15} m/s^2$ with a consequent individual size of the small particle of $m \approx i \times 10^{15} m/s^2 \approx 10^{-44}$ kg. American researchers are looking for particles in the range of 10^{-46}kg. The acceleration of $a = 6.801 \cdot 10^{31}\ m/s^2$ generates the proton. The acceleration is variable and applies to any type of acceleration.

B) Second part

2. Notes on the paper of the universal constant $\boldsymbol{i}$ (iota)

2.1 Small particles E_{min}

As a comparison to the fundamental forms of energy $E = mc^2$ and $E = hv$, the table E_{min} and the numbers 11), 12), 13) show the smallest energy quantity in the universe. To determine this quantity, we use a coupling constant 5 with $Z_{KK} = \frac{p_{vac}}{p_c}$. We add the number Z_{kk} to the spatial coupling constant $Z_{KK} = Z_l^3 = \left(\frac{Gm_{pr}^2}{hc}\right)^3$ and the Planck density to get the vacuum density p_{vac}. The smallest particle m_{min} results from the product of the vacuum density and the proton volume $m_{min} = p_{vac} \cdot V_{pr}$ plus additionally derives E_{min} with $m_{min}\, c^2$.

Goodpature to E_{min}

Z_{kk}	8,305E-118
$p_{c=}$ Planckdichte	8,205E+95
p_{vac}	6,814E-22
m_{min}	1,572E-66
E_{min}	1,413E-49

2.2 Comparison E_{min}

In order to better determinate a comparison of the forms of energy, they are represented numerically.

11) $E_{min}= mc^2= 1{,}413 \cdot 10^{-49}$ Joule $= 1{,}572 \cdot 10^{-66}$ kg $\cdot\ 8{,}988 \cdot 10^{16} \frac{m^2}{s^2}$

12) $E_{min}= hv = 1{,}413 \cdot 10^{-49}$ Joule $= 6{,}626 \cdot 10^{-34} \frac{kg\, m^2}{s} \cdot 2{,}133 \cdot \frac{10^{-1}}{s}$

13) $E_{min}= \frac{ha_s}{c} = 1{,}413 \cdot 10^{-49}$ Joule $= 6{,}626 \cdot 10^{-34} \frac{kg\, m^2}{s} \cdot 6{,}393 \cdot 10^{-8} \frac{m}{s^2} / 299792458 \frac{m}{s}$

The acceleration under number 13 $a_s = \frac{Gm_{pr}^3c^2}{h^2}$ can also be written $a_s = \frac{m_{-66}}{h} c^3$ and is thus the entry point for quantum gravity with the constants on the basis of the proton and the thus deriving small particles of the number:

$$Z_l = \frac{\frac{Gm_{pr}^3c^2}{h^2}}{\frac{m_{pr}c^3}{h}} = 9{,}400x\ 10^{-40}$$

The smallest mass $1.572 \cdot 10^{-66}$ kg can be derived in addition to the data from the table E_{min} also with $m = \frac{Gm_{pr}^3}{hc}$. The acceleration a (under number 13) is derived from the proton gravity field $a = \frac{Gm_{pr}}{l_{dB}^2}$ based on the de- Broglie wave length. The reciprocal value of $8{,}305 \cdot 10^{-118}$ results in the number of the particles m_{min} which compares the universe mass in relation to the small particle.

2.3 Frequency

Only with the frequency $v = 2.133 \cdot \frac{10^{-16}}{s}$ and thus the energy under No. 12.) is it possible to depict the smallest particle. According to Max Planck, however, the requirement demands that the frequencies at $E = hv$ must be at least greater than 1. This means that with $E = hv$ smallest particles cannot be determined, since the frequency is too small by 16 orders of magnitude. The acceleration $a_s = 6.393 \cdot 10^{-8} \frac{m}{s^2}$ under number 13 is the gravitational field acceleration of the proton $a_s = \frac{Gm_{pr}}{l_{dB}^2}$. This is followed by $\frac{ha_s}{c}$ (accelera-tion a_{pr}) hv (frequency v), since a higher image and thus the determination of particles is possible. The ratio $\frac{a}{c}$ can be converted into $v\ (\frac{1}{s})$. However, frequencies less than one are theoretically not possible (Max Planck). In contrast, the gravitational force $F_{Grav\ (4)} = m_{pr} \cdot a_s$ can be represented and mapped with a_s.

If one assumes that the universe rotates once in the time of t≈10^{15} s, this results in the above frequency.

2.4 coupling constant

John D. Barrow defines the dimensionless number 10^{-40} as the coupling constant. This number can be proven several times using the proton4 and others.

$a.)\ \frac{l_{dB}}{l_{uni}}$ $b.)\ \frac{t_{dB}}{t_{uni}}$ $c.)\ \frac{F_{Gravitation}}{F_{stark}}$ d.) $\frac{m_{pr}}{m_{+12}}$ e.) $\frac{a_s}{a_t}$ $f.)\ \frac{v_{-32}}{c}$

However, the most meaningful ratio for this work is:

$$\frac{m_{min}}{m_{pr}} = \frac{\frac{Gm_{pr}^3}{hc}}{m_{pr}} = \frac{1{,}572x\ 10^{-66}\ \text{kg}}{1{,}672x\ 10^{-27} kg} = 9{,}400x\ 10^{-40}$$

since the proton consists of three quarks, numerous force particles, all of which consist of the smallest particle mmin.

2.5 Inertia and heaviness

The inertial acceleration results from the known equations of the accelerations.

14) $a_t = \frac{l}{t^2}$

And for gravity acceleration

15) $a_s = \frac{Gm}{r^2}$

If one transforms these accelerations with the de Brogilie relation, one also obtains on the quantum level

16) $a_t = \frac{mc^3}{h}$

17) $a_s = \frac{Gm^3c^2}{h^2}$

If you put these two equations in two possible ratios, we get basic numbers for inert and heavy acceleration.

18) $Z_l = \frac{m^2 G}{hc}$

or

19) $\frac{1}{Z_l} = \frac{hc}{m^2 G}$

These two ratios represent the ratio of the heavy and sluggish acceleration in one number. If the number Z does not correspond exactly to the number 1, the heavy and sluggish acceleration is unequal. Einstein's equation of inertial and heavy acceleration is a special case that only results when the Planck mass is inserted into equations.

No. 19.) Planck mass in 20)

20) $\frac{hc}{m_{pl}^2 G} = \frac{hc}{\frac{hc}{G} G} = 1$

The accelerations shown from 16) and 17) given the proton mass and the small particle mass.

21) $m_{pr} = \boldsymbol{i}\, a_t = \frac{h}{c^3} \cdot \frac{m_{pr} c^3}{h} = 1{,}672\text{x } 10^{-27}\text{kg}$

22.) $m_{kl} = \boldsymbol{i}\, a_s = \frac{h}{c^3} \cdot \frac{G m_{pr}^3 c^2}{hc} = 1{,}572\text{x } 10^{-66}$ kg

2.6 Text definition variable for $\boldsymbol{i}$

A.) The first: The relationship $\boldsymbol{i} = Tex_{dB} \cdot t^2_{dB}$ defines the fineness of a thread, string (see Nr. 9), which oscillates in the period $t_{dB} = \frac{h}{mc^2}$.

B.) The product of a mass with the ratio between the period dB squared and its wavelength de Brogelie $\boldsymbol{i} = \frac{m t_{dB}^2}{l_{dB}}$

C.) A point mass crosses its wavelength l_{dB} in the time of t^2_{dB}. The formal relationship is ($\boldsymbol{i} = \frac{m t_{dB}^2}{l_{dB}}$).

D.) The particle shape $m = \frac{ha}{c^3}$ as the equivalence to the energy form is $E = \frac{ha}{c}$

E.) With the mass quantum, also the proportionality factor $\boldsymbol{i}$, the mass m is proportional to the acceleration. In principle, the following applies: the higher the acceleration, the more difficult it is to determine the mass. ($m = \boldsymbol{i}\, a$).

A notice:
The work, especially the main part, has been reduced to what is absolutely necessary. If there are repetitions anyway, they serve for understanding.

3) Others

3.1 Index of Formula Abbreviations

a_s gravitational field acceleration of the Proton[4]
a_t inertial acceleration of the protons[5]
E_{min} Smallest average energy size
F_{Grav} Gravitational force
i Constant of the mass quantum
l_{dB} de Broglie wavelength
m_{min} small particles (smallest average mass)
p_c Planck density
p_{vac} vacuum density
Tex_{dB} Fineness of a thread related to the de Broglie wavelength
t_{dB} time related to the passage of c through the de Broglie wavelength
v frequency
Z_l Dimensionless number (length reference)
Z_l^3 Dimensionless number (spatial reference)
Z_{KK} Dimensionless number of coupling constants

3.2 bibliography

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Set up

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