Quantum Gravity Constants

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Abstract

Gravity was the first fundamental force that humanity recognized, yet it remains the least understood. Physicists can predict the influence of gravity on stars and planets with exquisite accuracy, but no one knows how the force interacts with minute particles, or quanta. The nearly century-long search for a theory of quantum gravity a description of how the force works for the universe's smallest pieces is driven by the simple expectation that one gravitational rule should govern all galaxies, quarks and everything in between.

No theory has yet proven successful in describing the general situation where the dynamics of matter, modeled with quantum mechanics, affect the curvature of space-time. If one attempts to treat gravity as simply another quantum field, the resulting theory is not renormalizable. Even in the simpler case where the curvature of space-time is fixed a priori, developing quantum field theory becomes more mathematically challenging, and many ideas physicists use in quantum field theory on flat space-time are no longer applicable.

keyword: Quantum gravity, Gravity, Physics, Quantum mechanics

INTRODUCTION

Note

A-Physics Equations and Formulas

B-Quantum gravity constants

C-Quantum Dirac constants

D-A quantum black hole unit system

E-The Planck dimensions

F-The universe dimensions

G-Surface gravity and quantum speed at the horizon of a quantum black hole (Quantum universe)

H-The Planck dimensions (the Big Bang time)

I-The universe dimensions (End of the Triassic era about 199 million years ago)

The gravitational constant really a fundamental constant in physics, so it is important to test this basic assumption using objects in different gravitational places, times and conditions The fact that we see gravity doing the same thing in our solar system as it does in a distant star system without knowing How gravity behaves inside black holes, be it quantum c

$$E = mc^2$$

A

$$A_{\text{current}} = \frac{c^2 \times \sqrt{m}}{t}$$

$$V_{\text{tension}} = \sqrt{m}$$

$$w_{power} = \frac{(c^2 \times m)}{t} = \frac{E}{t}$$

$$e = 1.602176634 \times 10^{-19}\,\text{C}$$

$$e = \sqrt{m} \times c^2$$ (m quantum black hole mass)

G (the gravitational constant) $- 6.67408 \times 10^{(-11)} m^3 Kg^{(-1)} S^{(-2)}$

C (Speed of light)

The fine structure constant $\alpha = 7,2973525646 \times 10^{-3}$

The correction values in (β)

The reduced Planck's constant $\hbar = 1,054571818 \times 10^{-34}\ \boldsymbol{J.s}$

B-Quantum gravity constants
(End of the Triassic era about 199 million years ago)
β=90°

$$G_\alpha = \frac{\alpha \times c^4 \times \sqrt{G \times \hbar \times c}}{e^2 \times (2\pi) \times \sin(\beta)}$$

$$= 5,3253003 \times 10^{50}\, m^3 Kg^{(-1)} S^{(-2)}$$

$$G_\beta = \frac{e^2 \times (2\pi) \times \sin(\beta)}{\alpha \times c^4} \times \sqrt{\frac{G^3}{\hbar \times c}} = 8,3644755 \times 10^{-72}\, \boldsymbol{m^3 Kg^{-1} S^{-2}}$$

The gravitational constant

$$\boldsymbol{G} = \sqrt{G_\alpha \times G_\beta} = \mathbf{6.67408} \times 10^{-11}\, \boldsymbol{m^3 Kg^{-1} S^{-2}}$$

C-Quantum Dirac constants

(End of the Triassic era about 199 million years ago) β=90°

$$\hbar_\alpha = \frac{\alpha \times c^4}{e^2 \times (2\pi) \times \sin(\beta)} \times \sqrt{\frac{\hbar^3 \times c}{G}} = \mathbf{8,\ 4145105} \times 10^{26}\ \boldsymbol{J.s}$$

$$\hbar_\beta = \frac{e^2 \times (2\pi) \times \sin(\beta)}{\alpha \times c^4} \times \sqrt{\frac{\hbar \times G}{c}} = 1,3216713 \times 10^{-95}\ \boldsymbol{J.s}$$

Dirac's constant $\hbar = \sqrt{\hbar_\alpha \times \hbar_\beta} = 1,054571818 \times 10^{-34}\ \boldsymbol{J.s}$

D-A quantum black hole unit system

$$Time = \sqrt{\frac{\hbar_\beta \times G_\beta}{C^5}} = \frac{e^2 \times G \times (2\pi)}{\alpha \times c^7} = 6,75673 \times 10^{-105}\ \text{seconds}$$

$$Ray = \sqrt{\frac{\hbar_\beta \times G_\beta}{C^3}} = \frac{e^2 \times G \times (2\pi)}{\alpha \times c^6} = 2,0256163 \times 10^{-96}\, meters$$

$$Energy = \sqrt{\frac{\hbar_\beta \times C^5}{G_\alpha}} == \frac{e^2 \times (2\pi)}{\alpha \times c^2} = 2,4515365 \times 10^{-52}\ \boldsymbol{Jouls}$$

$$Mass = \sqrt{\frac{\hbar_\beta \times C}{G_\alpha}} = \frac{e^2 \times (2\pi)}{\alpha \times c^4} = \mathbf{2,\ 7276761} \times 10^{-69}\ \boldsymbol{Kg}$$

$$Force = \frac{C^4}{G_\alpha} = \frac{e^2 \times (2\pi)}{\alpha \times \sqrt{G \times \hbar \times c}} = 1,516842 \times 10^{-17}\ \boldsymbol{N}$$

$$Density = \frac{C^5}{\hbar_\alpha \times G_\alpha \times G_\beta} = \frac{e^2 \times (2\pi)}{\alpha \times \hbar \times G} \times \sqrt{\frac{c}{G \times \hbar}} = 6.4394599 \times 10^{36}\ \boldsymbol{Kg\ m^{-3}}$$

$$Pr\,essure = \frac{C^7}{\hbar_\alpha \times G_\alpha \times G_\beta} = \frac{e^2 \times (2\pi)}{\alpha \times \sqrt{\frac{G^3 \hbar^3}{c^5}}} = 5,74 \times 10^{52}\, \boldsymbol{Pa}$$

$$Current = \sqrt{\frac{C^6 \times 4 \times \pi \times \varepsilon_0}{G_\alpha}} = \frac{2 \times \pi \times e^2}{\alpha} \times \sqrt{\frac{4 \times \pi \times \varepsilon_0}{c^3 \times \hbar}} = 4,3366134 \times 10^{-36}\,\mathbf{A}$$

$$Tension = \sqrt{\frac{C^4}{G_\alpha \times 4 \times \pi \times \varepsilon_0}} = \frac{2 \times \pi \times e^2}{\alpha} \times \sqrt{\frac{1}{4 \times \pi \times \varepsilon_0 \times c^5 \times \hbar}} = 1{,}3009984 \times 10^{-34}\,\mathbf{V}$$

E-The planck dimensions

$$Time = \sqrt{\frac{\hbar_\alpha \times G_\beta}{C^5}} = \sqrt{\frac{\hbar_\beta \times G_\alpha}{C^5}} = \sqrt{\frac{\hbar \times G}{C^5}} = 5{,}3899187 \times 10^{-44} \sec onds$$

$$Ray = \sqrt{\frac{\hbar_\alpha \times G_\beta}{C^3}} = \sqrt{\frac{\hbar_\beta \times G_\alpha}{C^3}} = \sqrt{\frac{\hbar \times G}{C^3}} = 1{,}\ 6169756 \times 10^{-35}\,m$$

$$Energy = \sqrt{\frac{\hbar_\beta \times C^5}{G_\beta}} = \sqrt{\frac{\hbar_\alpha \times C^5}{G_\alpha}} = \sqrt{\frac{\hbar \times C^5}{G}} = 1.96244311628 \times 10^9\,J$$

$$Mass = \sqrt{\frac{\hbar_\beta \times c}{G_\beta}} = \sqrt{\frac{\hbar_\alpha \times c}{G_\alpha}} = \sqrt{\frac{\hbar \times c}{G}} = 2{,}18049235 \times 10^{-8}\,\mathbf{Kg}$$

$$Force = \frac{C^4}{G} = 1.213650 \times 10^{44}\ N$$

$$Density = \frac{C^5}{\hbar \times G_\alpha \times G_\beta} = 5{,}1575586 \times 10^{96}\,Kg.m^{-3}$$

$$\Pr essure == \frac{C^7}{\hbar \times G_\alpha \times G_\beta} = 4{,}6418 \times 10^{113}\,Pa$$

$$Current = \sqrt{\frac{C^6 \times 4 \times \pi \times \varepsilon_0}{G}} = 3{,}46798 \times 10^{25}\ A$$

$$Tension = \sqrt{\frac{C^4}{G \times 4 \times \pi \times \varepsilon_0}} = 1{,}049891 \times 10^{27}\,V$$

F-The universe dimensions (The radiation era)

(End of the Triassic era about 199 million years ago)

End-Triassic extinction, also called Triassic-Jurassic extinction, global extinction event occurring at the end of the Triassic Period (about 252 million to 201 million years ago) that resulted in the demise of some 76 percent of all marine and terrestrial species and about 20 percent of all taxonomic families. It is thought that the end-Triassic extinction was the key moment that allowed dinosaurs to become the dominant land animals on Earth. The event ranks fourth in severity of the five major extinction episodes that span geologic time.

$$Time = \sqrt{\frac{\hbar_\alpha \times G_\alpha}{C^5}} = 4{,}2942106 \times 10^{17} \sec onds$$

$$Ray = \sqrt{\frac{\hbar_\alpha \times G_\alpha}{C^3}} = 1{,}2882206 \times 10^{26}\,meters$$

$$Energy = \sqrt{\frac{\hbar_{\alpha} \times C^{5}}{G_{\beta}}} = 1,5788882 \times 10^{70} \ \boldsymbol{Jouls}$$

$$Mass = \sqrt{\frac{\hbar_{\alpha} \times C}{G_{\beta}}} = 1,7367754 \times 10^{53} \ \boldsymbol{Kg} = (\boldsymbol{Planck\ tension})^{2} / 2\pi$$

$$Force = \frac{C^{4}}{G_{\beta}} = .9.640342 \times 10^{104} \ N$$

$$Density = \frac{C^{5}}{\hbar_{\beta} \times G_{\alpha} \times G_{\beta}} = 4,149526 \times 10^{157} \ \boldsymbol{Kg.m^{-3}} \ (\textbf{the Big Rip time})$$

$$\Pr essure = \frac{C^{7}}{\hbar_{\beta} \times G_{\alpha} \times G_{\beta}} = 3,738726 \times 10^{174} \ \boldsymbol{Pa} (\textbf{the Big Rip time})$$

$$current = \sqrt{\frac{C^{6} \times 4 \times \pi \times \varepsilon_{0}}{G_{\beta}}} = 2,7717975 \times 10^{86}$$

$$Tension = \sqrt{\frac{C^{4}}{G_{\beta} \times 4 \times \pi \times \varepsilon_{0}}} = 8,311409 \times 10^{87} \boldsymbol{V}$$

G-Surface gravity and quantum speed at the horizon of a quantum black hole (Quantum universe)

1-Quantum speed at the horizon of a quantum black hole

$$\left(\left(\frac{e^{2} \times (2\pi)}{\alpha}\right) \times \sqrt{\frac{G}{\hbar \times c^{7}}}\right) = \left(\left(\frac{8 \times \pi^{2}}{\mu_{0}}\right) \times \sqrt{\frac{G \times \hbar}{c^{9}}}\right) = \left(\left(\frac{2 \times \pi^{3}}{\alpha \times \varphi_{0}^{2}}\right) \times \sqrt{\frac{\hbar^{3} \times G}{c^{7}}}\right) = \left(\left(\frac{2 \times \varphi_{0} \times e^{3}}{\alpha}\right) \times \sqrt{\frac{G}{c^{7} \times \hbar^{3}}}\right) = \left(\left(\frac{2 \times \pi \times e^{2}}{\alpha}\right) \times \sqrt{\frac{G \times \pi}{c^{7} \times e \times \varphi_{0}}}\right) = \left(\left(\frac{8 \times \pi \times \varphi_{0} \times e}{\mu_{0}}\right) \times \sqrt{\frac{G}{c^{9} \times \hbar}}\right) = \left(\left(\frac{8 \times \pi^{2}}{\mu_{0}}\right) \times \sqrt{\frac{G \times e \times \varphi_{0}}{c^{9} \times \pi}}\right) = 3,759833 \times 10^{-53} \ m/s$$

2-Surface gravity at the horizon of a quantum black hole

$$\left(\frac{e^{2} \times (2\pi)}{\hbar \times \alpha \times c}\right) = \left(\frac{8 \times \pi^{2}}{\mu_{0} \times c^{2}}\right) = \left(\frac{8 \times \varphi_{0}^{2} \times e^{2}}{\hbar^{2} \times \mu_{0} \times c^{2}}\right) = \left(\frac{2 \times \varphi_{0} \times e^{3}}{\alpha \times c \times \hbar^{2}}\right) = \left(\frac{2 \times \pi^{3} \times \hbar}{\alpha \times \varphi_{0}^{2} \times c}\right) = \left(\frac{2 \times \pi^{2} \times e}{\alpha \times c \times \varphi_{0}}\right) = 6,9861501 \times 10^{-10} \times 10^{-10} \ m/s^{2}$$

FLUX quantum (φ_0) =2,06783461×10^{-15} Wb

H-The planck dimensions

$$Plank\ time = \frac{3,759833 \times 10^{-53}}{6,9861501 \times 10^{-10}} = 5,\ 3899187 \times 10^{-44} \ \mathbf{s}$$

$$Planck\ Length = \frac{3,759833 \times 10^{-53}}{6,9861501 \times 10^{-10}} \times \boldsymbol{c} = \boldsymbol{1.616756} \times 10^{-35} \ m$$

$$Planck\ Mass = \frac{3,759833 \times 10^{-53}}{6,9861501 \times 10^{-10} \times \boldsymbol{G}} \times \boldsymbol{c}^{3} = 2.18049235 \times 10^{-8} \ Kg$$

$$Planck\ Temperature = \frac{3,759833 \times 10^{-53}}{6,9861501 \times 10^{-10} \times \boldsymbol{G} \times \boldsymbol{k}} \times \boldsymbol{c}^{5} = 1,4213918 \times 10^{32} \ K$$

$$k; Boltzmann\ Constant = 1.380649 \times 10^{(-23)} \ jK^{(-1)}$$

$$Planck\ Charg\,e = \frac{3,759833 \times 10^{-53}}{\sqrt{2\pi \times 6,9861501 \times 10^{-10} \times \boldsymbol{G}}} \times c^{3} = 1,875 \times 10^{(-18)} \ c$$

$$Planck\ Force = \frac{c^4}{G} = 1.213650\times10^{44}\ N$$

$$Planck's\ Power = \frac{c^5}{G} = 3.645\times10^{52} W$$

$$Planck\ Momentum == \frac{3,759833\times10^{-53}}{6,9861501\times10^{-10}\times G}\times c^4 = 6.541477 N.s$$

$$\textbf{Planck density} = \frac{\left(6,9861501\times10^{-10}\right)^2}{\left(3,759833\times10^{-53}\right)^2\times G} = 5,1575586\times10^{96} Kg.m^{-3}$$

$$Planck's\ Angular\ Frequency = \frac{6,9861501\times10^{-10}}{3,759833\times10^{-53}} = 1.855\times10^{43} rad.s^{-1}$$

$$\textbf{Planck pressure} = \frac{\left(6,9861501\times10^{-10}\right)^2}{G\times\left(3,759833\times10^{-53}\right)^2}\times c^2 = 4,6418\times10^{113} Pa$$

$$\textbf{Planck current} = c^3\times\sqrt{\frac{6,9861501\times10^{-10}}{2\pi\times G}} = 3,46798\times10^{25}\ A$$

$$Planck\ Tension = c^2\times\sqrt{\frac{2\times\pi}{6,9861501\times10^{-10}\times G}} = 1,049891\times10^{27} V$$

$$\textbf{Planck accelerations} = \frac{6,9861501\times10^{-10}}{3,759833\times10^{-53}}\times c = 5.560\times10^{51}\ m/s^2$$

I-The universe dimensions (End of the Triassic era about 199 million years ago)

$$Universe\ Time = \frac{c}{\left(6.9861501\times10^{-10}\right)} = 4,2942106\times10^{17} s$$

$$\textbf{universe Ray} = \frac{c^2}{\left(6,9861501\times10^{-10}\right)} = 1,2882206\times10^{26} m$$

$$\textbf{Universe mass} = \frac{c^4}{6,9861501\times10^{-10}\times G} = 1,7367754\times10^{53} Kg$$

$$Universe\ Energy = \frac{c^6}{6,9861501\times10^{-10}\times G} = 1,5583892\times10^{70}\ \textbf{Jouls}$$

$$Universe\ charge = \frac{c^4}{\sqrt{2\pi\times6,9861501\times10^{-10}\times G}} = 1,4938547\times10^{43} C$$

$$Universe\ Force = \frac{c^5}{G\times\left(3,759833\times10^{-53}\right)} = 9.640342\times10^{104}\ N$$

$$Universe\ Power = \frac{c^6}{G \times \left(3,759833 \times 10^{-53}\right)} = 2.891306 \times 10^{113}\ w$$

$$Universe\ Momentum = \frac{c^5}{6,9861501 \times 10^{-10} \times G} = 5.1985346 \times 10^{61}\ N.s$$

$$Universe\ density_{Big-Rip\ era} = \frac{\left(6,9861501 \times 10^{-10}\right)^2 \times c}{\left(3,759833 \times 10^{-53}\right)^3 \times G} = 4,149526 \times 10^{157}\ Kg.m^{-3}$$

$$Universe\ Angular\ Frequency == \frac{6,9861501 \times 10^{-10} \times c}{\left(3,759833 \times 10^{-53}\right)^2} = 1.477841 \times 10^{104}\ Hertz$$

$$Universe\ \ pressure_{Big-Rip\ era} = \frac{\left(6,9861501 \times 10^{-10}\right)^2}{\left(3,759833 \times 10^{-53}\right)^3 \times G} \times c^3 = 3,738726 \times 10^{174}\ Pa$$

$$Universe\ current = c^4 \times \sqrt{\frac{6,9861501 \times 10^{-10}}{2\pi \times G \times \left(3,759833 \times 10^{-53}\right)^2}} = 2,7717975 \times 10^{86}$$

$$Universe\ Tension = c^3 \times \sqrt{\frac{2 \times \pi}{6,9861501 \times 10^{-10} \times G \times \left(3,759833 \times 10^{-53}\right)^2}} = 8,311409 \times 10^{87}\ V$$

$$Universe\ Power_{big-rip\ era} = \frac{c^7}{G \times \left(3,759833 \times 10^{-53}\right)^2} = 2.3568804 \times 10^{174}\ w$$

$$Universe\ accelerations\ = \frac{6,9861501 \times 10^{-10}}{\left(3,759833 \times 10^{-53}\right)^2} \times c^2 = 4.433528 \times 10^{112}\ ms^{-2}$$

Conclusion

This work leads us to a complete quantum theory. Alternatively, it might be reasonable to use a model called quantum gravity, which deals with space-time as a tiny structure woven from rings the size of the Planck. In this description of physics, there is simply a concept of smaller than Planck sizes. While something of this kind is likely to be true in the full quantum theory of gravity, this structure is expected to emerge from the theory, rather than being a fundamental assumption of the theory. Although this work may be a viable candidate for a whole theory of quantum gravity, it may give insight into what happens at the centripetal diffraction of a quantum black hole.

References

1. E. L. Wright. Javascript Cosmology Calculator. With a default=69.6 (based on arXiv: 1406.1718), the calculated age of the universe with a redshift of z=1100 is in agreement with Olive and Peacock (about 370,000 years).2018.
2. Maoz. Going forward in time now, the temperature declined, and at T~3000 K, few of the photons in the radiation field, even in its high-energy tail, had the energy required to ionize a hydrogen atom. Most of the electrons and protons then recombined. Once this happened, at a time trec=380,000 yr after the Big Bang, the major source of opacity disappeared, and the Universe became transparent to radiation of most frequencies.2016;251-252
3. R. Johann. Connecting QGP-Heavy Ion Physics to the Early Universe. 243–244 (2013): 155–162.
4. Ryden, Barbara Sue (2003). Introduction to cosmology. San Francisco: Addison-Wesley.
5. M. Agostini. Test of Electric Charge Conservation with Borexino. Phys. Rev. Lett. 115, 231802.
6. S. Hocknull. Geoscientists at Queensland Museum (qm.qld.gov.au). 2010.
7. S. Narison. Particles and the Universe, From the Ionian School to the Higgs Boson and Beyond. World Scientific Publishing Company Pte Limited. 2015:219.