the general science journal

A Theory of Everything in 7 Equations

Brent Jarvis
Brent@JarvisInnovations.com

Abstract:

A geometric version of gravity is submitted that can unify the natural dynamics of large and small scale systems. The relationship between the Gaussian gravitational constant and Planck's constant is given as a testable unified field equation. A perplexing discovery is deduced from a gravitoelectromagnetic equation.

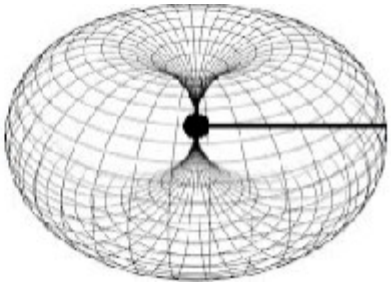
INTRODUCTION

We know from the standard model of cosmology that the Gaussian gravitational constant[1] $k = \sqrt{G}$, where G is Newton's constant and,

$$(1)\quad k = \frac{2\pi}{T}\sqrt{\frac{a^3}{(m_1 + m_2)}},$$

where m_1 and m_2 are the primary and secondary masses of a system respectively, a is the semi-major axis of the secondary's orbit, and T is its orbital period. Merging the Gaussian gravitational constant with Newton's law of gravity[2],

$$(2)\quad \Delta U = -\Delta\ell\mu(\Delta v)^2 = -\Delta\ell\mu\Delta S(\Delta f)^2 = \Delta a\,,$$



where U is the gravitational potential energy, μ is the reduced mass of the system, v is the secondary's speed, $S = (2\pi a)^2$ is the surface area of a horn torus (k was abandoned as a "constant" in 2012 by the IAU[3] since a is known to vary over extended periods of time), f is the secondary's inverse period (frequency), and $\ell = r/a$ with r being the secondary's distance (to conserve the total energy E).

Louis de Broglie's matter-wave relation[4] is,

$$(3)\quad \Delta\lambda = \frac{h}{\Delta p},$$

where λ is a particle's wavelength, h is Planck's constant, and p is a particle's momentum. Expanding Planck's constant h with Eqs. (2) & (3),

$$(4)\quad h = \Delta p \Delta\lambda = \frac{m_2(\Delta v)^2}{\Delta f} = \frac{m_2 \Delta U}{\Delta \ell \mu \Delta f} = -2e\Phi_o,$$

where e is the elementary charge unit and Φ_o is the magnetic flux quantum[5]. Since e is constant,

$$(5)\quad -e = \frac{\Delta U}{m_\mu \Phi_o \Delta \ell \Delta f} = -\frac{m_2 (\Delta v)^2}{2\Phi_o \Delta f} = -\frac{\Delta K}{\Phi_o \Delta f} = \text{constant},$$

where the sign is governed by Lenz's law[6], K is a particle's kinetic energy and the factor $m_\mu = 2\mu/m_2$. The factor m_μ could explain the factor of ≈ 2 for an electron's anomalous magnetic moment[7] since $\mu \approx m_2$ when $m_1 \gg m_2$. We can see from Eq. (5) that a particle's "charge" is equivalent to the constant ratio between the change in its kinetic energy ΔK and its flux-frequency $\Phi_o \Delta f$.

GRAVITOELECTROMAGNETISM

The scalar form of Coulomb's law[6] can be defined with the above relation as,

$$(6)\quad F_q = k_q \frac{(q_1 q_2)}{r^2} = -\blacktriangle c \frac{\Delta K_1 \Delta K_2}{(\Delta\Phi\Delta f)_1 (\Delta\Phi\Delta f)_2} = \blacktriangle c \frac{\Delta K_1 \Delta K_2}{\Delta V_1 \Delta V_2},$$

where q_1 and q_2 are the charges, k_q is Coulomb's constant, c is the speed of light in a vacuum, Φ is the signed magnitude of the magnetic flux, $V = -\Delta\Phi/\Delta t$ is the voltage according to Faraday's law of induction[6] (with Δt in seconds), and ▲ is,

$$(7)\quad \blacktriangle = \frac{\pi \mu_o c}{\Delta S} = 29.9792458 \text{ H Hz m}^{-2},$$

in henry hertz per meter squared and μ_o is the magnetic constant. Replacing the meter with a light second results in $\blacktriangle = c \times 10^{-7}$ H Hz m^{-2}, so ▲ blueshifts when particles are attracted towards each other and it redshifts when they repel.

The dark delta symbol ▲was chosen due to the fact that the latitudinal position of the Great Pyramid of Giza = ▲ to 3 significant figures (29.97916° N)[8]. Since this coordinate is relative to the Earth's equator, and there would be a miniscule shift in its present position due to the axial precession rate of ≈ 26,000 years, the accuracy of its position relative to ▲ is highly coincidental. Maybe we should broadcast a ▲ signal towards the Great Pyramid of Giza relative to the square meter of its missing apex so we can activate the stargate ;-) haha j/k.

DEDICATION

This paper is dedicated to Cynthia Cashman Lett, without whom it would not have been published.

REFERENCES

[1] Gauss, C. F.; Davis, C. H. (1857) "*Theory of the Motion of the Heavenly Bodies Moving about the Sun in Conic Sections*." Boston: Little, Brown and Company.

[2] Newton, I. (1687) "*Philosophiæ Naturalis Principia Mathematica*". Encyclopædia Britannica, London.

[3] *"Resolutions of the XXVIIIth General Assembly of the International Astronomical Union, 2012"* (PDF).

[4] de Broglie, L. (1970) "*The Reinterpretation of Wave Mechanics*" Foundations of Physics, Vol. 1 No. 1.

[5] "*CODATA Value: magnetic flux quantum*". *The NIST Reference on Constants, Units, and Uncertainty*. US National Institute of Standards and Technology. June 2015. Retrieved 2015-09-25. *2014*

[6] Sadiku, M. N. O. (2007) "*Elements of Electromagnetics*" (4th ed.). New York & Oxford: Oxford University Press. ISBN 0-19-530048-3.

[7] Schwinger, J. (1948) "On Quantum-Electrodynamics and the Magnetic Moment of the Electron" (PDF). *Physical Review*. **73**(4): 416.

[8] https://www.google.com/searchsource=latitude+of+great+pyramid