Parity violation is evidence that our universe is inside an extremal Kerr black hole (plus QEG)

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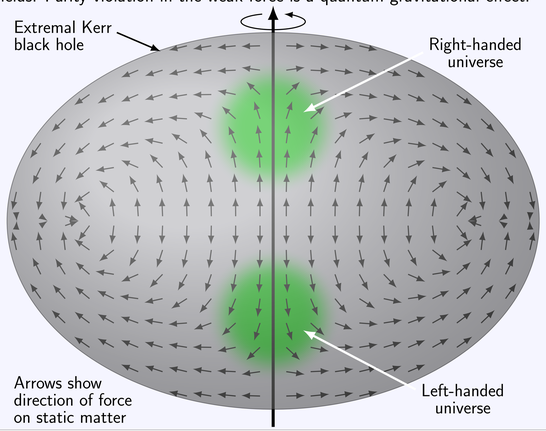
Parity violation: black hole angular momentum

A simple explanation for parity violation is that our universe is inside an extremal Kerr black hole (a black hole that is rotating as fast as possible)[1]. The angular momentum vector of the black hole is the axial vector responsible for parity violation. Instead of using general relativity, these results are based on absolute gravity — a theory that abandons general covariance.

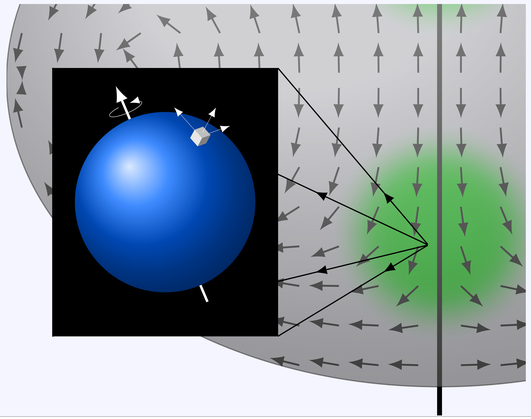
In the top half of the black hole, the arrows of gravitational force through the upper universe point in the same direction as the angular momentum vector. In the bottom half, the arrows point in the opposite direction. The upper universe is right-handed; the lower universe is left-handed (like our universe); total parity is conserved.

Parity violation is similar to the Aharonov-Bohm effect from electromagnetics, where potentials can have quantum mechanical effects that are not apparent from the fields. Parity violation in the weak force is a quantum gravitational effect.



Experimental possibilities: modulating the angular momentum

Local angular momentum may be able to modulate the angular momentum of the black hole. For example, fixed laboratories on Earth may be able to detect daily variations in parity violation as the Earth rotates around its axis.



Experimental evidence: daily variations and mechanical rotation

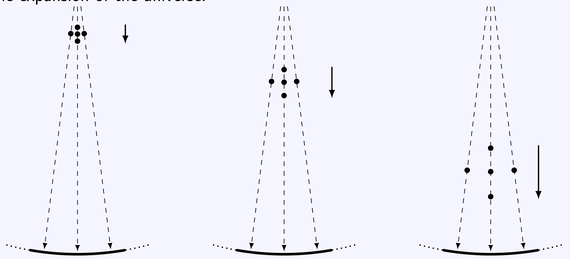
Experimental searches for suspected connections between radioactive decay and gravity date back to the time of Rutherford.

The most recent paper I found is from YuJian He, et al.[2]. In their paper they also review earlier papers. They measured daily variations in parity violation. They also modulated all sources of external angular momentum by rotating radioactive isotopes in a centrifuge, and measured variations in decay rates.

Their results are consistent with our universe being inside an extremal Kerr black hole, and consistent with a breakdown of general covariance.

Expansion of the universe: dark energy is gravity

In a Schwarzschild black hole matter is attracted to the inner surface of the event horizon and expands along the diverging lines of force[3]. This geometry can explain the expansion of the universe.



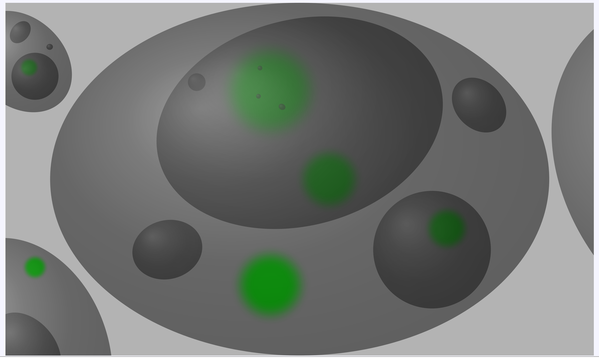
In an extremal Kerr black hole the same geometry exists along the axis of rotation, where the arrows of force diverge. A universe that exists along the axis of rotation is expanding as it is attracted to the inner surface of the event horizon.

At other locations inside an extremal Kerr black hole the lines of force converge, which would compress a universe. The circulating pattern of the arrows of force leads to a convection model of the universe.

The holoverse: nested black holes and universes

The idea that our universe is inside a black hole suggests that the black holes inside our universe may themselves contain other universes (endoverses), and that our black hole is inside an even larger universe (our exoverse), and so on. This potentially infinite structure of nested black holes and universes comprises the holoverse[3].

If our universe is being simulated, the event horizons provide boundaries where the simulation can be cut off to keep the simulation finite while applying boundary conditions that can make the holoverse appear to be infinite.



Absolute gravity: no spacetime, more gravitons

Absolute gravity works in absolute space and time. Absolute space and time is the familiar 3D space and universal time of classical mechanics. Absolute space and time is not the same as flat spacetime. In flat spacetime, Lorentz transforms can convert space into time. In absolute space and time, Lorentz transforms are physically impossible (though they are still useful approximations when gravity can be ignored).

Absolute gravity relies on gravitons to transmit gravity, instead of relying on curved spacetime. There are at least three kinds of gravitons: scalar, vector, and matrix.

	General relativity	Absolute gravity
Equivalence principle?	Yes.	Yes.
General covariance (equations look the same in all coordinate systems)?	Yes.	No, the equations are specific to absolute space and time.
Consistent with experiments?	Yes.	Yes.
Distant simultaneity?	No.	Yes.
Constant speed of photons?	Yes? A great question to start a debate with.	No, photons speed up and slow down in absolute space, as do electromagnetic clocks.
Universe in black hole?	No, impossible?	Yes, possible.
Are stationary event horizons hard shells?	No, matter can fall through.	Yes.

Absolute gravity: force equation

The absolute gravity force equation in summation notation[5], with $1 \le i, j, k \le 3$:

$$\frac{d^2 r^i}{d(x^0)^2} = -\left(\Gamma^i_{00} + 2\Gamma^i_{0k}\frac{dr^k}{dx^0} + \Gamma^i_{jk}\frac{dr^j}{dx^0}\frac{dr^k}{dx^0}\right) + \frac{dr^j}{dx^0}\left(\Gamma^0_{00} + 2\Gamma^0_{j0}\frac{dr^j}{dx^0} + \Gamma^0_{jk}\frac{dr^j}{dx^0}\frac{dr^k}{dx^0}\right).$$

In the 3D notation of classical mechanics[6], with $\mathbf{r} = [r_x, r_y, r_z]^\mathsf{T}$, $\mathbf{v} = \dot{\mathbf{r}}$, and $\mathbf{a} = \ddot{\mathbf{r}}$:

$$\mathbf{a} = -\left(b\,\overline{\mathbf{w}} + \overline{\mathbf{S}}\,\mathbf{d}\right) + \left(b\,\overline{g} + \overline{\mathbf{w}}\cdot\mathbf{d}\right)\mathbf{v}/c,$$

where:

$$b = c\,\dot{g}/2 + c\,\nabla g\cdot\mathbf{v} + \left(\nabla_\mathsf{T}\mathbf{w} + \nabla^\mathsf{T}\mathbf{w} - \dot{\mathbf{S}}/c\right)\cdot(\mathbf{v}\mathbf{v}^\mathsf{T})/2,$$

$$\mathbf{d} = c\,\dot{\mathbf{w}} - c^2\nabla g/2 + c\left(\nabla_\mathsf{T}\mathbf{w} - \nabla^\mathsf{T}\mathbf{w} + \dot{\mathbf{S}}/c\right)\mathbf{v} + \left(\nabla_\mathsf{T}\mathbf{S} + \nabla^\mathsf{T}\mathbf{S} - \nabla\mathbf{S}\right)\cdot(\mathbf{v}\mathbf{v}^\mathsf{T})/2,$$

and where, in terms of the gravitational potentials $g_{\mu\nu}$ and $g^{\mu\nu}$:

$$g = g_{00},\quad \mathbf{w} = \begin{bmatrix} g_{10} \\ g_{20} \\ g_{30} \end{bmatrix},\quad \mathbf{S} = \begin{bmatrix} g_{11}\,g_{12}\,g_{13} \\ g_{21}\,g_{22}\,g_{23} \\ g_{31}\,g_{32}\,g_{33} \end{bmatrix},\quad \overline{g} = g^{00},\quad \overline{\mathbf{w}} = \begin{bmatrix} g^{10} \\ g^{20} \\ g^{30} \end{bmatrix},\quad \overline{\mathbf{S}} = \begin{bmatrix} g^{11}\,g^{12}\,g^{13} \\ g^{21}\,g^{22}\,g^{23} \\ g^{31}\,g^{32}\,g^{33} \end{bmatrix}.$$

Mass does not appear in the force equation until electromagnetism is added[7].

References

[1] "Parity violation is evidence that our universe is inside an extremal Kerr black hole", pgu.org. [2] YuJian He, LiXi Zeng & ShengChu Qi, "Discussions about whether radioactive half life can be changed by mechanic motion", Sci China Ser B-Chem, May 2009, 52(5):693-698. [3] "Our universe is inside a black hole; dark energy is gravity", pgu.org. [4] "General relativity in ordinary three-dimensional space", pgu.org. [5] "The absolute gravity force equation in geodesic notation", pgu.org. [6] "The absolute gravity force equation as classical mechanics", pgu.org. [7] "General Relativity with Electromagnetism in Absolute Space and Time", pgu.org. [8] Vol III, pg 1-1.

Quantum electrogravity (QEG): the Grand Unified Theory

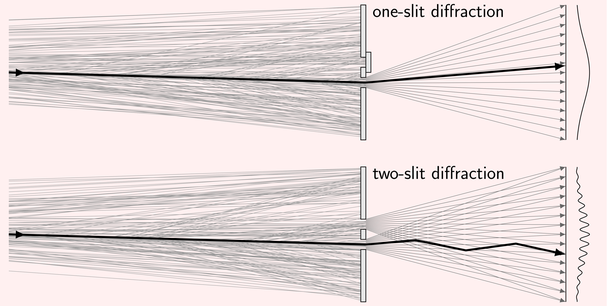
Adding electromagnetism to absolute gravity[7], and quantizing the combination, yields quantum electrogravity (QEG).

I think that QEG is the Grand Unified Theory. QEG encompasses all of the known forces. QEG offers physically sensible explanations for the mysteries of quantum mechanics. The next three boxes summarize current work in applying QEG to classical quantum mechanics, to the strong force, and to dark matter.

Classical quantum mechanics: diffusion through a graviton atmosphere

Feynman said that electron two-slit diffraction is "a phenomenon which is impossible, *absolutely* impossible, to explain in any classical way, and which has in it the heart of quantum mechanics. In reality it contains the *only* mystery."[8]

QEG provides a simple classical explanation for electron two-slit diffraction. The electron causes a graviton shower, the gravitons go through both slits while the electron goes through one slit, and reference frame interference ensues.

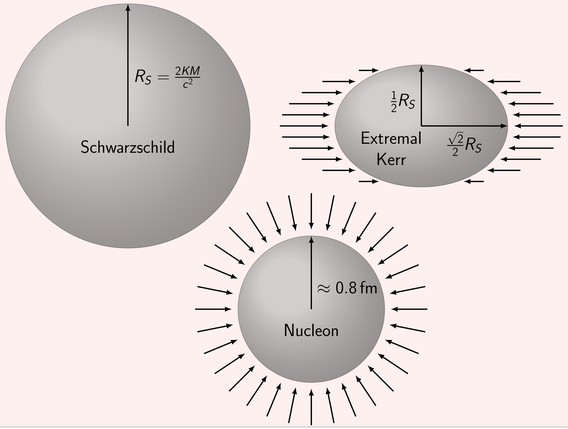


There is no wave/particle duality; everything is particles. This explains why the Schrödinger equation is so similar to the classical diffusion equation — particles (in this case, one energetic electron) are diffusing through gravitons.

Strong force: stress binding

In QEG the strong force, like the weak force, is gravitational.

In QEG there are three components to gravitational binding: mass, momentum, and stress. Stress binding is the strong force. Schwarzschild black holes are bound by mass alone. For a given mass, Kerr black holes are smaller because they are bound by mass, momentum, and gravitational stress. Nucleons are bound almost entirely by electromagnetic stress.



Dark matter: graviton atmospheres

Graviton atmospheres surround and permeate all massive bodies. Galaxies are no exception. The differences between graviton atmospheres around different galaxies are due to causes similar to those that cause differences in visible matter.