

Gravity Emerges as Space Manifests & Controls Soliton Energy Wave ©

Space Controlled Soliton Wave Manages Gravity Force & Velocity

Abstract

The energy of space between accelerating objects activates a process to establish a Soliton energy wave within Space itself. The field is always present, but the process emerges from the acceleration of an Inertial Mass (IM); the IM being accelerated by the isotropic gravitational field emanating from the presence of a Gravitational Mass (GM). The force of Gravity manifests whenever Space detects an acceleration of any mass at any scale. It is the stable solution that defines the physical Gravity wave mechanics for objects with mass moving through space. They are connected to each other through the dynamic Soliton wave energy within the Space between them and at the mass/space interface. In its energy exchange, Space, in its accelerated reference frame, establishes a Soliton wave between masses that is not confined to light speed.

The need for Speed

Newton did not know the cause of Gravity, but he did believe it was happening instantaneously under circumstances that would have to be assigned to a higher power. Even today philosophers of physics speak of it in terms of the hand of God to explain the results that are observed in the cosmos.¹

They also reference the work of Tom Van Flandern in their discussion pointing out that an expert in celestial mechanics was convinced that gravity needed to be moving much faster than light speed for it to successfully control the movement of masses and maintain stable configurations in solar systems, galaxies, and galaxy clusters. Space is the untapped source of energy to provide a means for a Gravity field to emerge when Space detects any acceleration and Space provides the means for the Gravity field to move faster than light speed.

Soliton Waves

These waves were first discovered in the early 19th century in the observation of a unique movement of a single water wave. Analysis of these waves in matter has led to the understanding of their complex nonlinear mathematical nature. Despite the potential forces that are expected to build up or diminish the size of the Soliton single wave it maintains its structure while traveling in the mass or energy field that it resides in. This system provides for a constant acceleration of different Inertial Masses moving through a GM field. Complex dynamical systems have been found to have Soliton solutions. ²

Across all Scales

One thinks of gravity when considering the vast stability and control of the movement of planets and galaxies in this vast cosmos . If Space is the background where this force emerges from, then it is also playing a key role at the atomic scale to maintain the stability of protons, neutrons, and electrons in atoms as the energy of Space is everywhere. The effectiveness of that force across so many scales require it to be extremely flexible. It is so extremely weak at one end it cannot be detected yet it is immensely strong at the other extreme.

Beyond Particle Physics

It is suggested here that Soliton waves in the hand and under the control of Universe would be an ideal energy efficient solution to master the flow of masses beyond particles through a massless energy space field if that process is not confined entirely to light speed. That field could be the aether, or a unique Space energy field.

Space's emergent response to acceleration between masses is not restricted to light speed for the vast distance between them as no particle is necessary for energy transfer in Space. This seems to be a means to explain the connection that somehow exists between entangled particles and the action that is achieved at great distances in a seemingly instantaneous time. Energy is transferred through the Space between them at greater than light speed.

This need not be confined to the quantum particle scale. The access and use of the Space between macro size objects is still available to Universe. The Universe can

establish an almost instantaneous Soliton wave between masses when any acceleration is detected. This can occur at a speed billions of times faster than 'c.'

Any required energy transfer at the Gravitational Mass or Inertial Mass/Space quantum scale interface could take place with the massless Boson, the Graviton, at the mass/space interface where the energy exchange is restricted to quantum rules. But the Soliton wave in the massless energy field of Space between masses need not be confined to light speed for gravity to do its work.

Newton's Laws

Newton's Laws for the force and acceleration of mass, and the force of Gravity require an unfamiliar perspective in this analysis to see the possibility of the Soliton wave playing a key role in maintaining a constant acceleration on the Inertial Mass of the object. The Lagrangian, kinetic energy minus the potential energy is equivalent to $F = ma$, so:

$$\text{K.E.} - \text{P.E.} = F_1 = m_2 a = F_G = GM_1 m_2 / r^2$$

$$T - V = (Gm_1 m_2 / r^2) * r$$

And since the distance is rate x time ($D = r = v_2 t$)

Giving energy factors to both sides.

$$\frac{1}{2} m_2 v_1^2 - m_2 g h = F_G = Gm_1 m_2 / v_2 t$$

The IM 'm₂' cancels out.

$$\frac{1}{2} v_1^2 - gh = Gm_1 / v_2 t$$

Note, v_1 is the velocity of the IM and v_2 is the speed of the energy force (call it Gravity) defined by Newton's equation. Working now with F_a and F_G as energy.

$$a * r = a v_1 t = Gm_1 / v_2 t$$

Solving for v_2 $v_2 = Gm_1 / a v_1 t^2$ $(m^3 / \text{kg} \cdot \text{sec}^2) \text{kg} / [(m / \text{sec}^2)(m / \text{sec})(\text{sec}^2)]$

Given: $a = 9.8 \text{ m/sec}^2$
 $G = 6.67408 \times 10^{-11} \text{ m}^3/\text{kg-sec}^2$
 $m_1 = 5.97220 \times 10^{24} \text{ kg}$ (mass of Earth)
 $v_1 = \text{velocity of the IM (m/sec)}$
 $t = t_0$ (time)

When a time is chosen consistent with a fast force field, that is $t_0 = 0.00001$, this generates a value offered in previous papers published in the GSJ that is comparable with the findings of Van Flandern, a gravity speed billions of time faster than light speed 'c.' ^{3,4}

For the acceleration to remain constant with v_1 increasing through this process, we see that v_2 must change. It must be the changing factor; it must be increasing since G is a constant. Fortunately, this is possible as energy is hidden in units of this complex factor $G, \text{m}^3/\text{kg-sec}^2$. Thus, the Universe can vary the rate of energy transfer via the variable v_2 , the velocity of gravity. It increases to maintain a constant acceleration of the Inertial mass. That is, the speed of the energy transfer, the gravity energy field velocity, changes. It is not limited to the light speed 'c.'

This unique feature is possible in a Soliton wave where the work takes place in a massless energy field of space unhindered by light speed 'c.'

Solitons Everywhere

Current research suggests that soliton waves play a part in our understanding of black holes.

"On a very different scale, a black hole can be understood as a topological soliton..." ⁵

"If it walks like a particle, and talks like a particle... it may still not be a particle. A topological soliton is a special type of wave or dislocation that behaves like a particle: it can move around but cannot spread out and disappear like you would expect from, say, a ripple on the surface of a pond. In a new study published in Nature, researchers from the University of Amsterdam demonstrate the atypical behavior of topological solitons in a robotic metamaterial, something which in the future may be used to control how robots move, sense their surroundings, and communicate." ⁵

*“Topological solitons can be found in many places and at many different length scales. For example, they take the form of kinks in coiled telephone coils and large molecules such as proteins. Solitons play an important role in biological systems, being relevant for protein folding and the development of cells or organs.”*⁵

It may be the same process that accounts for the instantaneous response to a force that returns to a rapid stability for a high angular velocity of a rotating mass in a gyroscope.

It could also be the method that permits spooky action at a distance where not only particles, but entangled macro-masses can still affect each other without any hidden variables but being connected by an energy field that with an established Soliton wave does permit energy transfer, not information, through the vastness of Space between them.

Summary

This is a hypothesis, “a tentative explanation for an observation, phenomenon, or scientific problem that can be tested by further investigation.” The Universe has Space, energy, energy fields, methods and means to respond to any acceleration at any scale for gravity to emerge and control mass from particles to galaxies. Ignored and far from understood, the Soliton wave could be the real missing physical explanation for the never-ending mystery of gravity. It offers a unique wave system that has an apparent false simpleness but may be the key to understanding complex nonlinear mathematical systems like Gravity. If Soliton waves give an understanding of black holes where gravity is at its max, then suggesting they are a part of the process that accounts for the emergent force of gravity is not a stretch. When Space detects any acceleration at any scale it has a unique tool to control accelerating masses at its will across vast distances in a very rapid, but not instantaneous, time. Gravity need not be confined to light speed.

References

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