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Gravitonic Dark Energy Ether: The Cosmological Constant and The Hyperspatial Polemic of Dimensional Comic Essences Represented as A Subspace Axis of Universal Force Manifestation

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Abstract

This paper explores the theoretical hypothesis that the observed universal physical forces of reality known as gravity and dark energy are not forces but in fact represent opposite higher dimensional forms in polarity with each other represented within a unified field as an intersecting axis within a seven-dimensional hyperspatial ether. This unified field theory of hyperspatial subspace ether suggests that gravity, responsible for the formation of galactic and solar accretion disks, is the predominantly active force at short cosmological ranges, while at an increased intergalactic scale, dark energy appears to be responsible for the universe's ever increasing rate of expansion. An intermediate zone of balance between the two-dimensional subspace forces appears to be responsible for the now disproved theory responsible for a balanced equilibrium of intergalactic expansion known as the cosmological constant. Theoretical insights from string theory, quantum mechanics, and cosmology, combined with observed experimental evidence are drawn upon to support this theoretical hypothesis.

Keywords: Dark Energy, Dark Matter, Galaxy Cohesion, Grand Unified Theory, General Relativity, Cosmological Constant, Subspace Ether

Introduction

The enigmatic and elusive true nature of the universal forces of gravity and dark energy have long been central areas of debate in both contemporary and theoretical physics. Gravity, as described by Albert Einstein's theory of general relativity, and the recently observed force of dark energy, observed from red-shift calculations of supernovae in distant galaxies is believed to be what drives the accelerated expansion of the universe, yet both appear to be fundamentally different. This paper posits that these forces are opposite polar dimensional essences of the same unified field subspace axis intersecting within a seven-dimensional hyperspace ether, with dominance varying across different spatial scales.

Theoretical Background

Hyperspace and Unified Field Theory:

Modern hyperspace theories propose the observable physical universe exists contained within a multifaceted higher-dimensional space. String theory and M-theory both suggest that contained in the fundamental essence of this reality there are multiple hidden compactified intersecting dimensions where fundamental unobserved interactions between them are constantly occurring[1,2]. In this framework, gravity and dark energy can be seen as different manifestations of an intersecting axis of a unified subspace field representing two polemic essences of a higher-dimensional hyperspatial matrix.

Gravity at Short Ranges:

Gravity, as was classically articulated by Issac Newton and later refined by Albert Einstein's theory of general relativity, is a fundamental force of nature which attracts all objects of mass to all others through warping space-time acting inversely with the square of the distance between masses[3,4]. This force of nature is responsible for shaping observed planetary orbits and the cohesion of the structure of galaxies. Empirical evidence observed, such as the deflection of the path of light by gravitational lensing and the precision measurements of planetary motions, validate this theoretical position[5,6].

Dark Energy & The Cosmological Constant:

Dark energy, a force of nature inferred from the constant acceleration of the expansion of the observed physical universe, is believed to comprise approximately 68% of the universe's total energy-mass density[7,8]. This repulsive force was originally believed to act in an equal and opposite way to gravity and was encapsulated in the equation symbol of the cosmological constant (Λ) term in Einstein's field equations, suggesting that there is an occupying uniform energy density filling interstellar and intergalactic space[9].

Opposite Dimensional Polarities:

Conceptual Framework:

In a theoretical seven-dimensional hyperspace ether, gravity and dark energy are hypothesised as two opposite polarities of the same unified essence energy field, expressed through a two-dimensional subspace axis intersecting our four-dimensional spacetime reality through a hyperspatial vibrating energy ether. Gravity as one pole of this hyperspace dimensional subspace axis would appear to dominate at short ranges being responsible for the cohering of galactic and stellar accretion disks, while dark energy would be the prevailing polemic axis at the cosmic range of intergalactic distances, akin to the interacting polemic of electric and magnetic fields in the theory of electromagnetism.

Mathematical Representation:

Extending general relativity to higher dimensions and incorporating terms describing gravity and dark energy interactions, the modified field equations can be expressed as:

$$R_{\mu\nu} - \frac{1}{2}g_{\mu\nu}R + g_{\mu\nu}\Lambda(r) = \frac{8\pi G}{c^4}T_{\mu\nu}$$

Where Λ (r) varies with distance r, representing the transition from gravity to dark energy dominance[10,11].

Experimental Evidence and Current Theories

Short-Range Gravity:

Experiments like the Cavendish experiment and modern torsion balance experiments confirm the inverse-square law of gravity at small scales[12,13]. These findings support the gravitational dominance at short ranges.

Long-Range Dark Energy:

Observations from the Hubble Space Telescope and the Wilkinson Microwave Anisotropy Probe (WMAP) provide empirical verification and support for the dark energy theory of the universe's accelerated expansion, which is theoretically attributable to the concept of dark energy[14,15]. These observations align with current models suggesting the dominance of dark energy at the intergalactic scales.

Intermediate Zone and the Cosmological Constant:

The balance between gravity and dark energy at intermediate scales is observed in galaxy clusters and large-scale cosmic structures. The ΛCDM model effectively describes the universe's large-scale structure and the transition between gravitational and dark energy regimes[16].

The Intergalactic Formation of Dark Matter & Galaxy Collisions:

As photons leave their home galaxy, the pressure of dark energy increases upon the particle-wave. This to local galaxies has little effect upon their trajectory through intergalactic space until at tremendous distances from their point of origination the exerted force of dark energy causes the photon to lose its velocity and according to Einstein's theories as mass and energy are equivalent as the photon loses is energy it gains mass and therefore in intergalactic space becomes inert dark matter, too small for detection yet still exerts its influence upon the net energy and mass ratio of intergalactic space which through its influence acts as an intergalactic attractive force occasionally pulling galaxies like Andromeda and The Milky Way into collision.

Discussion:

Implications for Modern Cosmology:

This unified higher dimensional subspace field hypothesis offers a novel and cohesive explanation for the observed structure and progressive evolution of the physical universe. It suggests a constantly evolving continuous transition between fundamental dimensional forces, rather than being thought of as discrete and separate unrelated phenomena, potentially resolving inconsistencies in the standard cosmological model and providing further insights into our understanding of dark matter, dark energy, and gravitational interactions.

Challenges and Future Research:

Despite the progress this hypothesis offers there are still theoretical and experimental challenges that remain. Precise measurements of gravitational interactions at the scale of cosmic distances and the elusive quantum nature of dark energy properties are essential to validating this hypothesis. Advanced future experiments and the development of new forms of telescope, such hypothesised Gravity Telescopes and conventional photonic telescopes such as the James Webb Space Telescope and experiments at the Large Hadron Collider, will be essential in testing these theoretical hypothesis[17,18].

Conclusion

The essential forces of nature known as gravity and dark energy, traditionally viewed as both separate and distinct forces, can now be interpreted as opposite dimensional polarities of axial essence intersecting within a unified subspace field representative of a vibrational seven-dimensional hyperspace ether. This original perspective now provides a novel framework for a new understanding of the universe's dimensional essences and fundamental forces and equating their interactions across different scales. Further developments in both research and experimental validation are necessary to confirm and realise this hypothesis, with the potential for revolutionising our future understanding of cosmology, dark energy, dark matter and theoretical physics.

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