

# Spacetime as a Dynamic Energy Field: A Testable Quantum Gravity Theory

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I propose a novel framework for Quantum Gravity where **Spacetime is fundamentally identified with the dynamic quantum gravity field itself**, conceptually termed the **Connected Rings**. This field is an **energetic extension of all existing Mass and Energy**, entirely eliminating the need for a separate geometrical background. Gravity arises from the **periodic intrinsic tension and recoil (oscillation)** within this connected field network. The theory's strength lies in its **unified resolution** of cosmic puzzles: **Dark Energy** is attributed to the perpetual intrinsic tension of the vacuum rings; the **Big Bang** is defined as the absolute **Quantum Initiation** of the field, enforced by a physical density boundary; and Black Holes are stabilized by **Dynamic Field Isolation** at the horizon. We present four **distinct, observable signatures** that challenge classical relativity, providing concrete targets for experimental verification of the field's existence.

## 1. Theoretical Framework: The Energetic Origin of Gravity

The core hypothesis dictates that the fundamental field of gravity (the G-Field) and the fabric of spacetime are identical. This field is generated *by* mass and energy, not merely affected *by* it. The familiar force of gravity results from the periodic tension and subsequent recoil within this interconnected network of rings. The theory seeks an elegant mathematical formalism that respects the principles of quantum mechanics while inherently generating the force of gravitational attraction.

## 2. Unified Cosmological Solutions

The field's stored energy function is structured to resolve major cosmological ambiguities: **Dark Energy** is the persistent, intrinsic tension found within the field. The **Quantum Initiation** concept imposes a hard, quantum boundary on maximum possible density, resolving the classical singularity problem. Black Hole stability is achieved as the event horizon establishes a **Dynamic Isolation barrier** for the internal ring structure.

## 3. Testable Signatures

These four predictions offer explicit observational targets for future experimental verification:

Prediction	Physical Mechanism (The Rings' Behavior)	Observable Signature
<b>1. Gravitational Wave Dispersion</b>	GWs propagate as <b>tension-recoil oscillations</b> through the quantum ring network, causing their speed to be slightly dependent on their frequency.	High-sensitivity observatories should detect a <b>subtle time-delay (dispersion)</b> between gravitational waves of different frequencies traveling over vast cosmic distances.
<b>2. Quantum Initiation Evidence</b>	The field enforces a <b>sharp, finite density boundary</b> at the earliest moment of time, preventing a singularity or a bounce.	Precise analysis of <b>Cosmic Microwave Background (CMB) anisotropies</b> should reveal patterns consistent with a <b>sudden, non-singular cessation of causality</b> at the earliest measurable moment.
<b>3. Modified Gravity at Low Acceleration</b>	The field's coupling strength with matter changes under extremely low gravitational stress, amplifying the effective gravitational pull without needing unseen dark particles.	<b>Observed galactic rotation curves</b> must perfectly align with a specific modification to the law of gravity at the galactic outskirts, supporting a Modified Gravity interpretation for the Dark Matter phenomena.
<b>4. Horizon Isolation Signatures</b>	A dynamic energy barrier is maintained at the event horizon, enforcing the isolation of the internal ring structure and preserving quantum information.	Anticipated <b>quantum emission signatures</b> or <b>echoes</b> detected after black hole mergers, indicating the horizon is a physical, <b>energetically active</b> boundary.

### Conclusion

The Connected Rings theory offers a unified, conceptually compelling, and observationally accessible path toward Quantum Gravity. We advocate for immediate experimental investigation into the predicted anomalies in gravitational wave propagation and cosmological boundaries.