

Theory of Ordinal Evolution: A Unified Field Theory Based on Regular Tetradecahedral Unitons(V3)

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Abstract

This paper presents the Theory of Ordinal Evolution, a fundamental unified framework identifying the regular tetradecahedral uniton as the indivisible minimal structure of the universe. It demonstrates that all waves, fields, energies, and matter in the universe are collective superpositions, vibrations, and ordered arrangements of these unitons. The theory unifies quantum discreteness, relativistic effects, and cosmic dynamics under a single principle, resolving the long-standing contradiction between quantum mechanics and relativity. By establishing the uniton as the fundamental carrier of all physical phenomena, the work provides a consistent foundation for foundational physics and cosmology.

Keywords

Ordinal Evolution, Uniton, Regular Tetradecahedron, Unified Field Theory, Fundamental Physics, Quantum Mechanics, Relativity, Cosmic Structure

1. Introduction

Modern physics relies on two major frameworks: quantum mechanics and relativity. Although these theories have achieved significant success, they remain separate, mutually incompatible, and unable to provide a unified description of the universe. Many fundamental questions, such as the origin of mass, the nature of waves and fields, the minimum scale of energy, and the structure of spacetime, still lack a consistent fundamental explanation.

This paper proposes the Theory of Ordinal Evolution, which establishes a single, unified foundation for all physical phenomena. The core idea is that the universe has an indivisible basic unit—the regular tetradecahedral uniton. All matter, waves, fields, and energy are formed by the superposition, vibration, and ordered arrangement of these unitons.

This theory unifies quantum phenomena, relativistic effects, field interactions, and cosmic structure under one fundamental principle.

2. Fundamental Hypothesis: The Uniton

The universe has a minimal, stable, and indivisible structural unit called the regular tetradecahedral uniton.

It is the smallest carrier of energy, vibration, and wave motion. Below this scale, no stable wave or material structure can exist. The geometric symmetry and dynamic characteristics of the regular tetradecahedral uniton determine all physical laws in the universe.

All physical quantities, including energy, wavelength, frequency, mass, and charge, originate from the structural and motion properties of unitons.

3. All Waves and Energy Are Uniton Superposition

All waves in the universe—including electromagnetic waves, gravitational waves, quantum waves, and field fluctuations—are essentially coherent vibrations and collective superpositions of unitons.

All forms of energy correspond to changes in the vibration state, orientation, spatial distribution, and ordering of unitons. Energy is not generated out of nothing; it is a dynamic expression of uniton motion.

There is no infinitely small energy or infinitely short wavelength. The minimum scale of all waves and energies is determined by the size and structure of the uniton.

4. Unitons as the Origin of Matter and Fields

Elementary particles such as electrons, protons, and neutrons are local condensed states formed by the aggregation and stable arrangement of unitons.

Fields, including electric fields, magnetic fields, and gravitational fields, are non-local extended distributions of unitons in space.

Thus, particles and fields are two manifestations of the same fundamental unitons:

- Local aggregation → particle
- Spatial distribution → field

5. Unified Mechanism of Quantum and Relativistic Effects

Quantum discreteness arises because energy and waves are composed of discrete unitons.

Relativistic effects arise from the dynamic behavior and spatial ordering of uniton groups under high-speed motion and strong interactions.

Ordinal Evolution Theory explains both quantum phenomena and relativistic laws with the same set of principles, eliminating the contradiction between the two systems.

6. Cosmic Structure and Self-Sustaining Order

The universe maintains its long-term stable operation not because energy never dissipates, but because unitons form a closed, self-cycling, highly ordered system.

Energy does not disappear; it only transforms between different order states of unitons. The symmetry of the regular tetradecahedral structure minimizes internal friction and energy loss, allowing the universe to maintain long-term dynamic stability.

7. Conclusion

Theory of Ordinal Evolution establishes a complete unified field theory based on the regular tetradecahedral uniton.

All waves, fields, energies, and matter in the universe are produced by the superposition, vibration, and ordinal variation of unitons. The theory provides a unified foundation for quantum mechanics, relativity, field theory, and cosmology, revealing the deepest operating principle of the universe.

8. Originality Statement

I declare that this paper, titled Theory of Ordinal Evolution: A Unified Field Theory Based on Regular Tetradecahedral Unitons, is entirely my original work. The concept of the regular tetradecahedral uniton, the principle of uniton superposition, and the entire framework of ordinal evolution are independently proposed and constructed by me. No part of this work has been plagiarized or copied from any other source.

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