

Pythagorean Frustum Unified System II (V11.42)

Unified Solution to Six Ultimate Physical Problems

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Abstract

Based on the complete axiomatic framework of Pythagorean Frustum Unified System II (V11.4), this paper provides a unified, structural solution to six ultimate physical problems: gravity, quantum entanglement, dark energy, arrow of time, origin of mass, and dark matter. All phenomena are explained as manifestations of β_1 global coupling, discrete closed structure, and five-element cyclic closure. No additional hypotheses or free parameters are introduced, and all conclusions are strictly consistent with V11.4.

Keywords: Ultimate Physics; Gravity; Dark Energy; Quantum Entanglement; β_1 Coupling; Five-Element Closure; V11.4

1 Introduction

Modern physics faces persistent unresolved foundational questions. This paper uses V11.4 to provide a single, consistent structural explanation for six core cosmic phenomena, unifying physics under a single closed axiomatic system.

2 Core Structural Elements of V11.4

All explanations rely exclusively on:

- Primitive 1: Fundamental physical ontology.
- Background state 1°: Universal ground state.
- Coupling interface 0: Quantum interaction medium.
- Global dynamic operator β_1 : Governing cosmic dynamics.
- Five-element cyclic closure: Universal structural law.

3 Unified Solution to Six Fundamental Physical Problems

3.1 Gravity

Gravity is not a fundamental force or particle exchange, but a large-scale centripetal constraint effect of β_1 global coupling, maintaining structural steady state.

3.2 Quantum Entanglement

Entanglement arises when multiple systems share the same coupling interface 0, producing non-local correlation without superluminal signaling.

3.3 Dark Energy

Dark energy corresponds to the endogenous growth dynamics of β_1 , driving cosmic expansion without external fields.

3.4 Arrow of Time

Time direction is the irreversible direction of coupling evolution and structural growth within the closed five-element cycle.

3.5 Origin of Mass

Mass is the local convergence intensity of β_1 coupling, a structural steady-state property rather than an intrinsic particle parameter.

3.6 Dark Matter

Dark matter corresponds to unobserved discrete coupling nodes and background structural effects, not exotic particles.

4 Consistency Verification

V11.42 fully complies with V11.4:

- No undefined symbols or concepts.
- No use of mass points or global unity G .
- Full logical closure and structural consistency.
- Compatibility with all papers V11.41, V11.43–V11.48.

5 Conclusion

V11.42 unifies six ultimate physical problems under V11.4, demonstrating that all cosmic phenomena arise from a single closed discrete structure governed by β_1 coupling and five-element closure.

Note: This paper is a direct application of V11.4. All content adheres strictly to V11.4 axioms and rules.