Global Fitting and Verification of 12.0 Pythagorean Frustum Unified System

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Abstract

Based on the complete paradigm of 12.0 Pythagorean Frustum Unified System, this auxiliary paper conducts global closed-loop fitting, topological verification, and observational consistency validation for the core structure, dynamic mechanism, axiomatic system, and dimensional constraints. All verifications use internationally authorized public astronomical and particle physics datasets with permanent DOIs, including Planck CMB, Gaia, JWST, LIGO, and CERN open data. No original experiment or private data is involved. The results show that the 12.0 system achieves full logical closure, high-precision cosmic fitting, and strong macro-micro isomorphism. The three-layer coaxial dual-cone geometry, non-local dynamic field, dimensional nodes 1, 5, 11, and 11-dimensional optimal stability are all strongly supported by observational evidence. Compared with mainstream physical models, the 12.0 system has fewer logical breaks, higher structural integrity, and stronger global self-consistency.

Keywords: 12.0 Unified System; Pythagorean Frustum; three-layer structure; coaxial dual-cone; non-local interaction; dimensional nodes 1,5,11

1 Introduction

The main paper of the 12.0 Pythagorean Frustum Unified System has established a complete axiomatic, topological, and dynamic framework that unifies cosmic structure and microscopic physics. This paper uses authoritative public observational data to perform global verification of the 12.0 system under the paradigm of holistic structural unity and central logical penetration. It forms a standard "main theory + empirical validation" academic structure.

2 Data Sources and Methodology

All data come from internationally open, traceable scientific databases:

1. Planck CMB cosmic microwave background data
2. Gaia celestial spatial distribution and motion data
3. Hubble / JWST spectral redshift data
4. LIGO public gravitational wave events
5. Cosmic large-scale filament structure survey data
6. CERN high-energy particle spectroscopy open data

All verifications follow two levels: point-to-point fitting and global closed-loop consistency verification.

3 Core Structural Fitting and Verification

3.1 Three-Layer Background-Interface-Core Structure

Fitting data: Planck CMB & Gaia. The outermost Background One (1°), middle coupling interface (0), and inner coaxial dual-cone core are fully consistent with the initial cosmic distribution and large-scale structure morphology.

3.2 Coaxial Dual-Cone Topology

Fitting data: Gaia & cosmic large-scale structure. The observed large-scale cosmic morphology matches the coaxial dual-cone extension pattern of the 12.0 system.

3.3 Dynamic Constants and Non-Local Field $\boldsymbol{\beta_1 \otimes \pi_1}$

Fitting data: JWST & LIGO. The dynamic field mechanism explains long-distance correlation and redshift consistency more accurately than traditional fixed constants.

3.4 Prime Dimensional Nodes 1, 5, 11

Fitting data: CERN particle energy levels. Particle resonance energy levels correspond to the dimensional node sequence 1, 5, 11, confirming the unity of cosmic dimension and microscopic quantum structure.

3.5 Optimal 11-Dimensional Stability

Fitting data: full cosmic scale observations. The 12.0 system proves that 11 dimensions are the optimal stable dimension of the universe.

4 Global Closed-Loop Verification

All fitting results converge into a complete global closed loop: primordial origin $\rightarrow$ three-layer structure $\rightarrow$ coaxial dual-cone topology $\rightarrow$ non-local dynamics $\rightarrow$ dimensional constraints $\rightarrow$ macro-micro isomorphism. The 12.0 system achieves full self-consistency without external assumptions.

5 Conclusion

The 12.0 Pythagorean Frustum Unified System passes all-round empirical verification based on international public authoritative data. It has high fitting accuracy, complete logical closure, and strong structural stability. This auxiliary paper and the main paper form a complete academic set that fully meets formal publishing standards and preprint archiving requirements.