The Huayan Sumeru Cosmology and Gödel's Rotating Universe:

A Unified Theory Through Frequency Ontology and the Axis Mundi Model

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Abstract

This paper establishes a rigorous mathematical isomorphism between the cosmology of the *Avataṃsaka Sūtra* (Flower Adornment Scripture) and Gödel's rotating universe solution in general relativity. The bridge is a frequency ontology, positing the universe as fundamentally a frequency field.

From the *Garbhāvakrānti Sūtra*—"In the time of a finger snap, there are 320,000 myriad billions of thoughts"—the universal foundational frequency is derived:

$$\nu^* = 3.69 \times 10^{15}\,\text{Hz}$$

Within this framework:

- The "great water of one taste" is the fundamental frequency field Φ_0;
- The "ten wind wheels" are harmonic modes $\nu_k = \nu^*/k$ ($k = 1, \ldots, 10$);
- Mount Sumeru is the axial center of a local Gödel patch with rotation parameter $\omega_4 = \gamma_4\nu_4$;
- The "twentyfold nested world systems" form a frequency tower $\nu_i = \nu^*/i$ ($i = 1, \ldots, 20$);
- The Flower Adornment World Sea is the total universe $\mathcal{U}$.

The Huayan Universal Equation is:

$$\boxed{0 = 1 + T(\Phi(t))}$$

where $T(\Phi(t))$ is the global self-consistency operator measuring the total deviation of the universal frequency field configuration from equilibrium.

Direct scriptural corroboration is drawn from five passages in the *Avataṃsaka Sūtra*: Samantabhadra's samādhi, Maitreya opening the tower by a finger snap, the "perfect enlightenment" at the very opening of the Sūtra, Sudhana's realization of Samantabhadra (the journey from Mañjuśrī to Samantabhadra), as well as the "continuation of the world" genesis in the *Śūraṅgama Sūtra*.

Philosophical implications include: emptiness as "the absence of any fixed independent eigenfrequency"; the illusory nature of time in light of Gödel's closed timelike curves; and the observer as part of the field configuration.

This study demonstrates that the cosmological vision of the *Avataṃsaka Sūtra* and the mathematics of general relativity describe the same underlying structure. The frequency ontology

and the Sumeru Axis Mundi Model serve as the bridge between these two cognitive paths—ancient Eastern wisdom and modern Western science.

Keywords: Avataṃsaka Sūtra; Śūraṅgama Sūtra; Gödel universe; frequency ontology; Mount Sumeru; finger snap; emptiness; unified equation