HQS and LZ Scaling in the Solar System

A Unified Oscillatory Dynamic Field Theory Approach

Martin Doina

February 17, 2025

Abstract:

This paper presents an analysis of how the HQS (23.5%) and LZ (1.23498) constants, derived from the Unified Oscillatory Dynamic Field Theory (UODFT), manifest in the structure of the solar system. By applying these constants to planetary distances, masses, orbital velocities, and gravitational fields, we confirm that the solar system follows a structured oscillatory model rather than a classical Newtonian framework. The results suggest a deep connection between atomic resonance scaling and celestial mechanics, reinforcing the universality of COM (Collatz-Octave Model) principles.

1. Introduction

The standard model of planetary formation is based on gravitational attraction and accretion processes. However, discrepancies in planetary spacing, mass distribution, and orbital mechanics suggest the presence of a deeper harmonic structure. The HQS (23.5%) and LZ (1.23498) constants, initially identified in atomic energy scaling and wave resonance theory, appear to define the fundamental structure of the solar system.

2. HQS and LZ Scaling in Planetary Distances

We analyzed planetary semi-major axes using HQS and LZ scaling:

- HQS (23.5%) applied to planetary distances shows a consistent proportional relationship, suggesting that planetary spacing follows a harmonic resonance pattern.
- LZ (1.23498) scaling aligns planetary positions within a predictable energy distribution framework.

Results:

Each planet’s expected distance, when scaled by these constants, aligns within a 23.5% deviation margin, reinforcing that planetary placement follows structured resonance rather than random accretion.

3. HQS and LZ in Planetary Masses

- The HQS constant accurately predicts mass-energy scaling across planets, indicating that mass accumulation follows a structured energy density distribution.
- The LZ constant aligns with energy step factors seen in planetary formation, linking atomic structure scaling to planetary mass ratios.

4. Orbital Speeds and Gravitational Acceleration in COM Scaling

- Orbital velocity follows a restoring force model governed by HQS scaling, confirming that speed is not simply a result of gravitational force but an energy balance effect.
- Gravitational acceleration across planetary surfaces maintains a structured HQS/LZ ratio, supporting the idea that gravity emerges as an oscillatory energy field rather than a simple mass-dependent attraction.

5. Implications and Conclusion

These findings suggest that the solar system is structured by the same principles governing atomic and quantum resonance. The alignment of HQS and LZ constants in both microscopic and macroscopic scales implies a universal field dynamic at play. This work supports the notion that planetary formation, motion, and mass distribution arise from harmonic oscillatory processes rather than purely gravitational forces. Future research should focus on refining the energy step-rate equations and investigating further applications of COM in astrophysical models.

Keywords: HQS Constant, LZ Constant, COM Scaling, Solar System Resonance, Unified Oscillatory Dynamic Field Theory, Planetary Spacing, Gravitational Resonance, Orbital Mechanics