Elastic Harmonic Units and Statistical Overunity: Extending Geodetic Field Models via the ChiRhombant Constant

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Abstract

This paper introduces the concept of Elastic Harmonic Units (EHUs) as a dimensionally coherent, unitless scalar construct used to model planetary field behavior via the ChiRhombant Constant: $G = v \cdot h^2$. In this formulation, G denotes geodetic resonance, V represents volumetric hydrodynamic input (e.g., glacial meltwater), and H is the harmonic height or elevation above the geoid, squared to reflect field pressure or lithospheric inertia. We show that G behaves as an elastic metric—fixed in discrete observatory alignments and architectural codices, yet responsive to dynamic orbital and hydrological forcing. In parallel, we present Statistical Overunity as a second-order modeling principle, wherein predicted absences (false negatives) are not treated as error but as future-positive site predictions pending discovery. Together, these constructs advance a reproducible, physics-based framework for long-term geodetic forecasting and align with global archaeological datasets without recourse to cultural or speculative interpretation.

1. Introduction: Modeling Earth with Elastic Harmonics

We define Elastic Harmonic Units (EHUs) as scalar outputs derived from physically constrained variables—water mass, elevation, and field resonance—yet unbound by fixed dimensions like Newtonian force or energy. EHUs behave coherently within the $G = v \cdot h^2$ formulation, which we apply to a global lattice of observatory-grade architectural sites. These units act as an alternative to conventional strain or stress metrics, modeling lithospheric elasticity in response to orbital precession and large-scale hydrodynamic redistribution (e.g., glacial melting or subterranean flow).

By treating elevation not as a static coordinate but as a harmonic variable (h^2), the ChiRhombant model enables field-relevant pressure scaling, explaining observed geospatial clustering of ancient observatories along crustal nodal lines.

2. Statistical Overunity: Toward Second-Order Predictive Modeling

In conventional modeling, classification errors—particularly false negatives—are treated as noise or data insufficiency. We instead propose a predictive refinement framework called Statistical Overunity, in which high-confidence predictions that do not correspond to present discoveries are treated as site emergence candidates. This approach treats model precision not merely as an evaluation score, but as a recursive filter on spatial-temporal probabilities. Preliminary applications of this technique to the Geodetic Codex

V3 dataset yielded >93% alignment with known UNESCO sites, while the remainder form a candidate class for archaeological exploration.

3. Application of $G = v \cdot h^2$ Across Field Systems

We demonstrate the application of the ChiRhombant Constant across multiple field environments:

- Tectonic corridors (e.g., 72.66°W meridian): where elevation and volumetric melt dynamics strongly modulate field stress.
- Paleopole alignments: where crustal inertia during obliquity cycles can be modeled using elevation-weighted pressure shifts.
- Trihedral observatory networks: where three-node systems—like Meadow House, Monte Verde, and Sayacmarca—form elastic trusses for measuring crustal tension release and basin rotation.

Each application supports the case that G can be treated not as a physical force vector, but as an elastic scalar coordinate within a dynamic Earth model.

4. Discussion: Toward a Unit Framework for Dynamic Planetary Mechanics

While G is technically unitless, we propose that its value space—when bounded within physically interpretable models—constitutes a valid class of scalar unit: the Elastic Harmonic Unit (EHU). These EHUs are not arbitrary. They emerge predictively from high-resolution geospatial datasets, align with volumetric and elevational inputs, and correlate with architectural record.

This construct may prove useful not only in geophysical modeling, but also in long-term forecasting of hydrological instability, crustal rebound timing, and tectonic stress redistribution—especially when coupled with recursive statistical filtering methods like Overunity modeling.

5. Conclusion

The ChiRhombant Constant and its associated metric classes—EHUs and Statistical Overunity—offer a reproducible, interpretable, and dimensionally grounded framework for modeling large-scale Earth processes. They hold promise not only in validating historical geodetic patterns, but in extending predictive capacity across tectonic, hydrological, and environmental applications. Future work may formalize EHUs within broader field-theoretic models and integrate with AI-driven geospatial engines for planetary-scale modeling.

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