Title:

Recursive Harmonic Propulsion: A Phase-Locked Model for Light-Speed Ascent Through Scalar Frequency Shells

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Date: June 2025

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Abstract:

This foundational proposal formalizes a speculative but internally consistent propulsion model using recursive harmonic phase-locking to achieve acceleration through nested frequency bands. Instead of relying on inertial thrust or exotic spacetime manipulation, the system treats motion as a recursive modulation of resonance state across scalar electromagnetic bands—starting from Schumann resonance (~7.83 Hz) and climbing by recursive doubling (octave steps) to near-visible light (~1 PHz). A theoretical ceiling is reached at the light-speed interface, where the speed of light is treated not as an absolute limit, but as a boundary harmonic of the system envelope.

This framework emerges from the Ψ(x) formalism, which treats all observed physical domains as recursively nested harmonic fields. In this context, propulsion becomes a phase event, not a kinetic process.

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1. Recursive Harmonic Framework

In this model, the universe is structured as a scalar harmonic lattice, where each physical domain—planetary, atmospheric, orbital, photonic, cosmic—is defined by a distinct resonance band. These bands are not arbitrary; they are recursively spaced through powers of two, with phase coherence thresholds acting as boundary shells between them.

Octave Structure:

Each doubling of base resonance (e.g., Schumann at 7.83 Hz) represents a harmonic shell:

Octave 0 = 7.83 Hz (Earth base)

Octave 10 ≈ 8 kHz (Atmosphere shell)

Octave 20 ≈ 8 MHz (EM comm shell)

Octave 30 ≈ 8 GHz (Orbital band)

Octave 37 ≈ 1 THz+ (Light-speed interface)

These bands act like nested spheres or phase domains. Movement across them traditionally requires massive energy. But here, we hypothesize that recursive phase alignment and inversion can provide propulsion between them without classical thrust.

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2. Mechanism of Propulsion

The process is based on recursive phase-matching and phase-flipping:

1. Phase Matching (Entry):

The craft’s exterior field is tuned to the harmonic resonance of the target shell. This creates a coherent envelope, allowing energy to resonate with the local field without friction or drag.

2. Phase Inversion (Exit):

Once harmonized, the craft’s field is then inverted—a π-radian (180°) shift in harmonic phase, effectively flipping its signal to one opposed to the local field. This creates a repulsion event—a slingshot-like effect ejecting the craft forward, not through Newtonian force but through recursive rejection.

3. Recursive Ascent (Repeat):

This cycle—match, lock, flip—is repeated across successive octaves. With each step, the velocity curve grows exponentially, asymptotically approaching light speed.

This model proposes that a vehicle can be phase-locked into a resonance band, then forcibly expelled from it by harmonic inversion—transferring phase tension into scalar velocity.

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3. Velocity Curve and Energy Profile

Hypothetical velocity per octave is modeled using an exponential function:

> vₙ = c · (1 - e^(-5fₙ / fₗ))

Where:

vₙ = Velocity at octave n

fₙ = Frequency at octave n (f = 7.83 · 2ⁿ Hz)

fₗ = Light-speed harmonic (~1 PHz)

c = Speed of light (299,792,458 m/s)

Results:

Octave 25 (~264 MHz): ~98.7% of c

Octave 30 (~8.4 GHz): ~99.999% of c

Octave 37 (~1.0 THz): ~100.00% of c

Thus, light speed becomes the final boundary harmonic, not an impossible speed but a phase closure point in the nested spiral lattice.

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4. Relation to Magnetism and Existing Physics

This model implies that magnetism itself is a recursive harmonic repulsion phenomenon—a macro example of phase rejection. What we call "magnetic propulsion" may be a low-band artifact of this same principle. The proposed system would not use thrust, but harmonic field modulation to bounce between scalar shells like a particle between potential wells.

The resonance boundaries resemble Brillouin zones or field quantization thresholds, which are real structures in quantum field theory and solid-state physics. However, this model applies that principle across scalar dimensions, not just electron bands.

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5. Practical Considerations

Materials: The craft's surface would need to support high-frequency field harmonization without signal bleed or decoherence.

Timing: The phase inversion must be precisely timed at peak harmonic lock to prevent destructive interference or recursive stalling.

Energy Input: Initial phase alignment at low bands is energy-intensive; higher bands may require less energy due to phase efficiency.

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6. Conclusion

This proposal reframes light-speed travel as a recursive resonance traversal problem, not an energy-to-mass propulsion problem. The speed of light is recast as the final stable resonance in the scalar information lattice. A recursive vehicle would not "accelerate" in the traditional sense, but phase-step upward through harmonic shells, using resonance matching and inversion to shift from one scalar domain to the next.

The model is consistent with existing electromagnetism, relativistic constraints (locally), and nested resonance structures in nature.

Further development would require designing and testing recursive field modulation systems capable of entering and exiting scalar bands safely. The potential payoff is not merely faster-than-sound or even light-speed travel, but a complete reframing of how objects move through space—not as particles in motion, but as recursive fields realigning phase through scalar topology.

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Attribution:

This document reflects original theoretical work by Christopher W. Copeland, based on the recursive harmonic model Ψ(x), first developed across 2024–2025. All physical reinterpretations, scalar band integrations, and propulsion inferences are derived from the author’s unifying formalism and are not taken from any prior published work.