

Statement to Referees and Reviewers

TriPhase Wave Mechanics Companion Papers

February 2026

Invitation for Critical Review

We welcome rigorous critical examination of this work. These papers present falsifiable predictions derived from first principles, and we invite the scientific community to test them.

What We Claim

1. **Derivation, not fitting:** Peak positions, w_0 , and other values are calculated from vacuum electromagnetic properties (ε_0 , μ_0 , Z_0), not fitted to observations.
2. **Fewer parameters:** The CMB spectrum is reproduced with 3 free parameters versus Λ CDM's 6, while achieving comparable χ^2 values.
3. **Specific numerical predictions:** We derive specific values ($\ell_3/\ell_2 = 1.533$ from base $3/2$, $w_0 = -181/216$, $H_0 = 71.48$ km/s/Mpc, Casimir factor = $2/3$) that can be tested against current and future data.

What We Do NOT Claim

1. We do not claim to replace Λ CDM—we propose an alternative derivation pathway that makes additional testable predictions.
2. We do not claim the framework is complete—significant work remains to formalize the Lagrangian structure and extend to other domains.
3. We do not claim priority over any existing physics—we build on established results from QED, cosmology, and fluid dynamics.

Specific Points for Review

We particularly invite scrutiny of:

- **The crystallographic projection argument** (Paper I, Section 2.2): Does the $[111]$ direction projection legitimately yield 120° phase separation?
- **The mode-counting derivation** (Paper I, Appendix A): Is the Fourier analysis of three-phase constraints mathematically rigorous?

- **The w_0 derivation chain** (Paper II, Section 2): Does the geometric mean coupling with self-coupling prohibition follow from stated axioms?
- **The distance-redshift derivation** (Paper IV, Section 2): Does wave packet slowing from the Q_c balance equation legitimately yield $d = (c/H_0) \ln(1+z)$?
- **The waveguide connection** (Paper IV, Section 2): Is the identification of $v_g \times v_\phi = c^2$ as a standard waveguide dispersion relation (applied to vacuum mode structure) physically justified?
- **The bias factor prediction** (Paper IV, Section 4): Is the 0.00% match to SH0ES a genuine prediction or coincidence?
- **Statistical methodology** (All papers): Are the χ^2 comparisons and uncertainty propagations handled correctly?

Data and Code Availability

All calculations can be reproduced from the equations provided. Python verification scripts are available at: <https://github.com/triphase-physics/triphase-v16>

Contact

We welcome correspondence regarding technical questions, identified errors, or proposed experimental tests.

Christian R. Fuccillo
 mis@misolutions.co.site

“We don’t run from criticism—we learn from it.”