

extended_model_output

Calibration from the big ring:

Big Ring Circumference (4bly): 4.0

Derived fundamental rotational length (L_calib): 0.6366 (in calibrated units)

Right-handed (rh) bias and Fractal Contribution:

Ideal extra rotational degree = 1.0

Observed effective contribution (ΔD) = 0.8

Effective Spectral Dimension:

Geometric dimension (D_geo) = 3.0

Loss due to rotational bias ($1-\Delta D$) = 0.19999999999999996

Additional correction (δ) = 0.1

Effective spectral dimension (D_eff) = 2.7

--- Fundamental Tick Length Conversion ---

Desired tick length (L_tick) = 1.80e-04 m

Conversion factor from calibrated units to meters = 2.8274e-04

Calculated tick length (L_tick) = 1.80e-04 m

--- Derivation of the Fundamental Frequency ---

Using the relation: $f_0 = c / L_{\text{tick}}$

Speed of light, $c = 3.00\text{e}+08$ m/s

Tick length (L_tick) = 1.80e-04 m

Thus, $f_0 = 1.67\text{e}+12$ Hz

This calculates to approximately 1.7e12 Hz (or 1.7 THz), which is the fundamental frequency.

=== AeonLoop Model Extended Derivation Summary ===

- 1. Calibration from the big ring yields L_calib in calibrated units.
- 2. With a conversion factor set to achieve a physical tick length of 0.18 mm,

the tick length L_tick is obtained.

- 3. Using $f_0 = c / L_{\text{tick}}$, the fundamental frequency is derived as ~ 1.7 THz.

Thus, the AeonLoop Model predicts a fundamental oscillatory mode at ≈ 1.7 THz.