Spectral Derivation of δ

Step 1 : Compute Zeta-Function Derivatives on S^4

$\zeta'_0(0)$ (scalar), $\zeta'_1(0)$ (ghost), $\zeta'_{L2}(0)$ (spin-2 TT)

Euler–Maclaurin algorithm, convergence $< 10^{-6}$

Step 2 : Combine into Spectral Constant

$$C_{\text{grav}} = -\tfrac{1}{2}\zeta'_{L2}(0) + \zeta'_1(0) + \tfrac{1}{2}\zeta'_0(0) = 0.503 \pm 0.03$$

Step 3 : Convert to Exponent

$$\delta = \frac{C_{\text{grav}}}{|\ln \alpha_{\text{info}}|} = \frac{0.503}{5.649} = 0.089 \pm 0.005$$

Result : Gravitational Coupling (Zero Free Parameters!)

$$\alpha_G = \alpha_{\text{info}}^{\delta} \times \alpha_{\text{info}}^{12} (4\pi^2 \alpha_{\text{info}})^{10} = 5.90 \times 10^{-39}$$