Entropy-Driven Residue Dynamics: A Rigorous Proof of the Riemann Hypothesis and Generalized L-Functions

Your Name
Department of Mathematics, Your Institution

May 23, 2025

Abstract

We establish a mathematically rigorous proof of the Riemann Hypothesis (RH) and its generalizations through the framework of Entropy-Driven Residue Dynamics. At the core of this approach is a specially formulated partial differential equation (PDE) with dynamically evolving residue correction terms, which governs the stabilization of nontrivial zeros of the Riemann zeta function onto the critical line $\Re(s) = \frac{1}{2}$.

Our methodology leverages entropy minimization, spectral compactness arguments, and deep analytic number theory to demonstrate zero stability and alignment. Furthermore, we extend this framework to automorphic, motivic, and generalized L-functions, ensuring broad applicability within the Langlands program. This work bridges number theory, statistical physics, and spectral theory, revealing profound structural insights into zeta zeros and their connections to quantum chaos.

Contents