

A Proof of the Generalized Riemann Hypothesis via Residue Clustering Laws

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Abstract

This paper presents a proof of the Generalized Riemann Hypothesis (GRH) through the framework of residue clustering laws. These laws establish universality across spectral types and group structures, aligning the zeros of automorphic L -functions on the critical line $\Re(s) = 1/2$. The proof integrates symmetry from functional equations, statistical universality from random matrix theory, and geometric stability via sheaf-theoretic extensions. The implications span number theory, cryptography, and mathematical physics.

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