

Joint ACMS and Math Colloquium



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A New Equivalence and Approach to the Riemann Hypothesis via Root Finding and Optimization

The speaker recently designed a new variant of Newton's method, named Backtracking New Q-Newton's method (BNQN). This method has strong global convergence guarantees, in particular in finding roots of meromorphic functions in 1 complex variable. This talk presents a new equivalence to the Riemann hypothesis via the dynamics of BNQN, and experiments exploring using the method to find roots of the Riemann xi function. The insights from the experiments suggests a new approach towards the Riemann hypothesis. This is joint work with Thuan Quang Tran.

Mon, March 17, 2025

3:45 – 4:45 PM

127 Hayes-Healy Center

Colloquium Tea – 3:15 PM in 101A Crowley Hall