

WEIGHTED CENTRAL LIMIT THEOREM FOR CENTRAL VALUES OF L-FUNCTIONS

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A classical result of Selberg says that $|\log|\zeta(1/2 + it)|$ has a Gaussian limit distribution. We expect the same thing holds for $|\log|L(1/2, \chi)|$ for χ being over the primitive Dirichlet characters modulo q , as q tends to infinity. Proving such a result remains completely out of reach, as it would imply 100% of these central L-values are non-zero, which is a well-known open conjecture. In this talk, I will describe how one can establish a weighted central limit theorem for the central values of Dirichlet L-functions. Under the Generalized Riemann Hypothesis, one can also obtain a weighted central limit theorem for the joint distribution of the central L-values corresponding to twists of two distinct primitive Hecke eigenforms. This is joint work with Natalie Evans, Stephen Lester and Kyle Pratt.