
VORRAPAN CHANDEE, CRM

Simple zeros of primitive Dirichlet L -functions and the asymptotic large sieve

Assuming the Generalized Riemann Hypothesis, we show using the asymptotic large sieve that 91% of the zeros of primitive Dirichlet L -functions are simple. This improves on earlier work of Ozluk which gives a proportion of at most 82%. We further compute a q -analogue of the Pair Correlation Function $F(\alpha)$ averaged over all primitive Dirichlet L -functions in the range $|\alpha| < 2$. Previously such a result was available only when the average included all the characters χ . This is a joint work with Yoonbok Lee, Sheng-Chi Liu and Maksym Radziwill.