

Philadelphia Area Number Theory Seminar

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Nonvanishing of Dirichlet L -functions

Abstract: Central values of L -functions encode essential arithmetic information. A host of theorems and widely believed conjectures predict that they should not vanish unless there is a deep arithmetic reason for them to do so (and that this should be an exceptional occurrence in suitably generic families). In particular, it is conjectured that $L(\frac{1}{2}; \chi) \neq 0$ for every Dirichlet character χ .

In this talk, I will begin with a non-technical overview of the analytic number-theoretic techniques used to establish non-vanishing of L -functions and then present recent progress, in joint work with Khan and Ngo, on the non-vanishing problem for Dirichlet L -functions to large prime moduli, which also leverages deep estimates on exponential sums.

Tuesday, September 13, 2022
2:15{4:15 PM

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Informal refreshments at 2:15PM { Talk at 2:45PM