Leibniz Universität Hannover

Oberseminar
Zahlentheorie und Arithmetische Geometrie

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"Angles of Gaussian Primes"

Fermat showed that every prime p=1 mod 4 is a sum of two squares: $p=a^2+b^2$, and hence such a prime gives rise to an angle whose tangent is the ratio b/a. Hecke proved that these Gaussian primes are equidistributed across sectors of the complex plane, by making use of (infinite) Hecke characters and their associated L-functions.

In this talk I will present a conjecture, motivated by a random matrix model, for the variance of Gaussian primes across sectors, and discuss ongoing work about a more refined conjecture that picks up lower-order-terms. I will also introduce a function field model for this problem, and describe the analogue to Hecke's equidistribution theorem, in this setting. By applying a recent result of N. Katz concerning the equidistribution of "super even" characters (the function field analogues to Hecke characters), I will provide a result for the variance of function field Gaussian primes across sectors; a computation whose analogue in number fields is unknown beyond a trivial regime.

Donnerstag, 23.11.2017
ab 12:00 Uhr, g117
Hauptgebäude der Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.

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