Institut f. Analysis und Zahlentheorie

Zahlentheoretisches Kolloquium

Freitag, 17. 5. 2019, 14:00 Uhr

Seminarraum Analysis-Zahlentheorie (NT02008), Kopernikusgasse 24/II

Local statistics of sqrt(n) mod 1 and related problems

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Abstract:
It is an elementary exercise to show that the sequence of the square roots of the positive integers is equidistributed modulo 1. I will discuss results concerning the fine-scale statistics of this sequence, such as the determination of its gap distribution by Elkies and McMullen (using homogeneous dynamics) and its pair correlation in joint work with Jens Marklof and Ilya Vinogradov (based on the Elkies-McMullen approach along with some analytic number theoretic estimates). I will also mention an ongoing project with Carlo Pagano whose goal is to understand such statistics for the square roots of subsets of the integers (such as the square-free integers).

P. Grabner, R. Tichy