



Der Wissenschaftsfonds.



Institut f. Analysis und Zahlentheorie

Zahlentheoretisches Kolloquium

Freitag, 13. 1. 2017, 15:00 Uhr

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

Estimates of Divisor Sums and Diophantine Sets

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Abstract: We discuss asymptotics and explicit upper bounds of average divisor sums $\sum_{n \leq N} \tau(f(n))$ where $f(n)$ is monic quadratic polynomial with integer coefficients.

We then illustrate recent applications of these upper bounds in problems for $D(n)$ - m -tuples, which are m -tuples of distinct positive integers (a_1, \dots, a_m) such that $a_i a_j + n$ is a perfect square for all $i \neq j$, where n is a nonzero integer. (The conjecture for nonexistence of $D(n)$ - m -tuples in the case $(m, n) = (5, 1)$ was very recently resolved by He, Togbé and Ziegler with different methods.)

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