

abstract

Joint IAS-PU Number Theory Seminar
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

We prove the existence of second main term of order $X^{\{5/6\}}$ for the function counting cubic fields. This confirms a conjecture of Datskovsky-Wright and Roberts. We also prove a variety of generalizations, including to arithmetic progressions, where we discover a curious bias in the secondary term. Roberts' conjecture has also been proved independently by Bhargava, Shankar, and Tsimerman. In contrast to their work, our proof uses the analytic theory of Sato-Shintani's zeta functions. This is a joint work with Frank Thorne.

We give a generalization for counting relative cubic extensions of a given base number field, which is a joint project with Frank Thorne and Manjul Bhargava.