

**Speaker:** Florian Sprung

**Title:** Hilberts Tenth Problem for Some New Families of Number Fields

**Abstract:** Hilberts Tenth Problem asks whether there is an algorithm that can decide whether a Diophantine (integral coefficients) equation has integral solutions. Matiyasevich in 1970 showed the answer in general was no. Denef and Lipshitz generalized Matiyasevichs theorem to Diophantine equations with coefficients in rings of integers of some number fields, and conjectured that their result should hold for any number field. We present some new cases of their conjecture, building crucially on the connection with elliptic curves and concomitant work by Poonen, Shlapentokh, and Garcia-Fritz-Pasten. This is joint work with D. Kundu and A. Lei.