Algebra
Seminar

Athens-Atlanta joint Number Theory Seminar

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Boston U. and U. Montreal

Abstract: Talks will be at the University of Georgia

Jennifer Balakrishnan (Boston University), 4:00
A tale of three curves

We will describe variants of the Chabauty–Coleman method and quadratic Chabauty to determine rational points on curves. In so doing, we will highlight some recent examples where the techniques have been used: this includes a problem of Diophantus originally solved by Wetherell and the problem of the "cursed curve", the split Cartan modular curve of level 13. This is joint work with Netan Dogra, Steffen Mueller, Jan Tuitman, and Jan Vonk.

Dimitris Koukoulopoulos (U. Montreal), 5:15
On the Duffin-Schaeffer conjecture

Let S be a sequence of integers. We wish to understand how well we can approximate a "typical" real number using reduced fractions whose denominator lies in S. To this end, we associate to each q in S an acceptable error δ_q¿0. When is it true that almost all real numbers (in the Lebesgue sense) admit an infinite number of reduced rational approximations a/q, q in S, within distance δ_q? In 1941, Duffin and Schaeffer proposed a simple criterion to decided whether this is case: they conjectured that the answer to the above question is affirmative precisely when the series $\sum_{q\in S} \phi(q)\delta_q$ diverges, where phi(q) denotes Euler's totient function. Otherwise, the set of "approximable" real numbers has null measure. In this talk, I will present recent joint work with James Maynard that settles the conjecture of Duffin and Schaeffer.

Tuesday, September 24, 2019, 4:00 pm

Mathematics
Emory University