COLLOQUIUM

DEPARTMENT OF MATHEMATICS AND STATISTICS
OAKLAND UNIVERSITY
ROCHESTER, MICHIGAN 48309

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Ranks of elliptic curves

Abstract

I will discuss elliptic curves from the classical number theoretic point of view of trying to solve Diophantine equations. The aim will be both to explain how we think about these creatures and to give an overview of what we can (and sometimes can't) prove about them, and to illustrate it with explicit examples. I will not try to describe the huge modern technical machine that has been developed to study elliptic curves, so most of the results will come as black boxes. I will end by outlining my joint work with Tim Dokchitser on ranks of elliptic curves, and its applications to the Birch and Swinnerton-Dyer conjecture and the distribution of ranks of Bhargava et al.

Short Biography: Vladimir Dokchitser is a Reader in Number Theory and a Royal Society University Research Fellow at King's College London, UK. He was an undergraduate and a graduate student at Trinity College, Cambridge. He then held a 1-year postdoctoral position at the Max Planck Institute in Bonn before returning to Cambridge first as a Junior Research Fellow at Gonville & Caius College, and then as the Meggitt Fellow at Emmanuel College. He moved to Warwick in 2013, and finally came to King's in 2016. His research interests include the arithmetic of elliptic curves, the Birch-Swinnerton-Dyer conjecture and other L-value conjectures, Galois representations and hyperelliptic curves.

Tuesday, April 4, 2017
1:30 – 2:30 PM
Room 372 MSC

(Refreshments at 1-1:30 PM in the kitchen area adjacent to 368 MSC)