NATALIA GARCIA-FRITZ, University of Toronto

Curves of low genus and applications to Diophantine problems

In 2000, Paul Vojta solved the n-squares problem under the Bombieri-Lang conjecture, by explicitly finding all the curves of genus 0 or 1 on certain surfaces of general type related to this problem. In this talk I will sketch a refined and generalized version of the geometric method implicit in Vojta's work. I will also discuss new arithmetic applications conditional to the Bombieri-Lang conjecture in the case of number fields, and unconditional for function fields.