

## Variations on quadratic Chabauty

Jennifer Balakrishnan, Oxford University

Let  $C$  be a curve over the rationals of genus  $g$  at least 2. By Faltings' theorem, we know that  $C$  has finitely many rational points. When the Mordell-Weil rank of the Jacobian of  $C$  is less than  $g$ , the Chabauty-Coleman method can often be used to find these rational points through the construction of certain  $p$ -adic integrals.

When the rank is equal to  $g$ , we can use the theory of  $p$ -adic height pairings to produce  $p$ -adic double integrals that allow us to find integral points on curves. In particular, I will discuss how to carry out this "quadratic Chabauty" method on hyperelliptic curves over number fields (joint work with Amnon Besser and Steffen Mueller) and present related ideas to find rational points on bielliptic genus 2 curves (joint work with Netan Dogra).