

Department of Mathematics, BGU

AGNT

On Wednesday, May ,21 2025

At 14:10 – 15:10

In 101-

Martin Ludtke (Ben Gurion University)

will talk about

Refined Chabauty–Kim computations for the thrice-punctured line over $Z[1/6]$.

Abstract: If X is a curve of genus at least 2 defined over the rational numbers, we know by Faltings's Theorem that the set $X(\mathbb{Q})$ of rational points is finite but we don't know how to systematically compute this set. In 2005 Minhyong Kim proposed a new framework for studying rational (or S-integral) points on curves, called the Chabauty–Kim method. It aims to produce p -adic analytic functions on $X(\mathbb{Q}_p)$ containing the rational points $X(\mathbb{Q})$ in their zero locus. We apply this method to solve the S-unit equation for $S=\{2,3\}$ and computationally verify Kim's Conjecture for many choices of the auxiliary prime p .