Bernoullis Tafelrunde

Graduate Student Seminar

Thursday, 19 April 2018, 12:15-13:00
Seminarraum 00.003, Spiegelgasse 1

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The Mordell-Weil Theorem and the rank of elliptic curves

Abstract

We will look at elliptic curves defined over the rationals. The Mordell-Weil Theorem tells us that the group of points of these elliptic curves is finitely generated, which allows for the definition of the rank. This mysterious quantity is defined very abstractly and is still not well understood as of today despite being studied extensively. We will see what tools are used when trying to compute the rank through the definition of the Selmer and Tate-Shafarevich groups, and what the current results and conjectures in this area are.