UNEXPECTED POINTS IN NON-ABELIAN CHABAUTY LOCI

ALEX BETTS

The non-abelian Chabauty method developed by Minhyong Kim aims to compute the rational solutions to certain kinds of Diophantine equations by using tools ultimately borrowed from topology. Sometimes, in addition to rational solutions, the output of the method contains additional irrational solutions. In this talk, we will survey what is known about these extra "unexpected" solutions, and when they appear. This is the subject of ongoing work with Jennifer Balakrishnan, in which we are beginning to classify all of the possibilities for these unexpected solutions for integer solutions to elliptic curve equations.