

Eric Katz: **Uniform bounds on rational and torsion points on curves**

I will discuss the recent proof with Joseph Rabinoff and David Zureick-Brown that there is a uniform bound for the number of rational points on genus g curves of Mordell-Weil rank at most $g-3$, extending a result of Stoll on hyperelliptic curves. Our work also gives unconditional bounds on the number of rational torsion points and bounds on the number of geometric torsion points on curves with very degenerate reduction type. I will outline the Chabauty-Coleman method for bounding the number of rational points on a curve of low Mordell-Weil rank and discuss the challenges to making the bound uniform. These challenges involve p -adic integration and Newton polygon estimates, and are answered by employing techniques in Berkovich spaces, tropical geometry, and the Baker-Norine theory of linear systems on graphs.