AN EXPLICIT UNIFORM BOUND FOR RATIONAL POINTS ON CURVES

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Abstract: The celebrated Mordell conjecture, proved by Faltings, asserts that a curve of genus greater than one over a number field has only finitely many rational points. A deep uniform upper bound on the number of rational points follows from Vojta's inequality and the recent works of Dimitrov-Gao-Habegger and Kühne. In this talk, I will introduce an explicit version of this uniform bound. Our approach relies on analyzing Arakelov Kähler forms via localization of Bergman kernels. This is joint work with Jiawei Yu and Xinyi Yuan.