

Application of (mixed) Ax-Schanuel to counting rational points on curves

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With Philipp Habegger we recently proved a height inequality, using which (and previous work of Rémond in the realm of the classical Bombieri-Faltings-Vojta method) one can prove that the number of rational points on a 1-parameter family of curves of genus g is bounded in terms of g , degree of the field, the family and the Mordell-Weil rank of each individual curve in this family. In this talk I'll explain how the height inequality yields this bound, and then explain how this method can be generalized to an arbitrary family assuming mixed Ax-Schanuel for universal abelian varieties. This is work in progress, joint with Vesselin Dimitrov and Philipp Habegger.