Séminaire de théorie des nombres

Le 29 mars 2021 à 14h (BigBlueButton)

Equidistribution and Uniformity in Families of Curves

Exposé de Lars Kühne
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Résumé : In the talk, I will present an equidistribution result for families of (non-degenerate) subvarieties in a (general) family of abelian varieties. This extends a result of DeMarco and Mavraki for curves in fibered products of elliptic surfaces. Using this result, one can deduce a uniform version of the classical Bogomolov conjecture for curves embedded in their Jacobians, namely that the number of torsion points lying on them is uniformly bounded in the genus of the curve. This has been previously only known in a few select cases by work of David–Philippon and DeMarco–Krieger–Ye. Finally, one can obtain a rather uniform version of the Mordell-Lang conjecture as well by complementing a result of Dimitrov–Gao–Habegger : The number of rational points on a smooth algebraic curve defined over a number field can be bounded solely in terms of its genus and the Mordell-Weil rank of its Jacobian. Again, this was previously known only under additional assumptions (Stoll, Katz–Rabinoff–Zureick-Brown).