



Der Wissenschaftsfonds.



Institut f. Analysis und Computational Number Theory (Math. A)

Zahlentheoretisches Kolloquium

Freitag, 12. 12. 2014, 15.15 Uhr

Seminarraum C 208, 2. Stock, Steyrergasse 30, TU Graz

Linear relations on families of powers of elliptic curves

DR.FABRIZIO BARROERO

(Scuola Normale Superiore di Pisa)

In a recent work Masser and Zannier showed that there are at most finitely many complex numbers $\lambda \neq 0, 1$ such that the points $(2, \sqrt{2(2-\lambda)})$ and $(3, \sqrt{6(3-\lambda)})$ are simultaneously torsion on the Legendre elliptic curve E_λ of equation $y^2 = x(x-1)(x-\lambda)$. This is a special case of conjectures about Unlikely Intersections on families of abelian varieties, proved later in the two dimensional case by the same authors. As a natural higher dimensional extension, we considered the case of three points $(2, \sqrt{2(2-\lambda)})$, $(3, \sqrt{6(3-\lambda)})$ and $(5, \sqrt{20(5-\lambda)})$ and proved that there are at most finitely many $\lambda \neq 0, 1$ such that these three points satisfy two independent linear relations on E_λ . This is a special case of a more general result in the framework of the conjectures mentioned above. This is joint work with L. Capuano.

R.Tichy