

BERNOULLIS TAFELRUNDE

GRADUATE STUDENT SEMINAR

Monday, 30 October 2023, 12:15–13:00
Seminarraum 05.002, Spiegelgasse 5

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Unlikely Double Intersections in a power of a modular curve

ABSTRACT

The Zilber-Pink Conjecture, which should rule the behaviour of intersections between an algebraic variety and a countable family of “special varieties”, does not take into account double intersections; some results related to tangencies with special subvarieties have been obtained by Marché-Maurin in 2014 in the case of powers of the multiplicative group and by Corvaja-Demeio-Masser-Zannier in 2019 in the case of elliptic schemes. We prove that any algebraic curve contained in $Y(1)^2$ is tangent to finitely many modular curves, which are the one-codimensional special subvarieties. The proof uses the Pila-Zannier strategy: the Pila-Wilkie counting theorem is combined with a degree bound coming from a Weakly Bounded Height estimate.