Speaker: Umberto Zannier

MAIN TALK: Some relative cases of Manin-Mumford for abelian surfaces

RTG Talk: Torsion points on subvarieties of group varieties: a brief overview of classical issues and more recent ones

Abstract: A few years ago Masser posed as a question whether two points P, Q with abscissas resp. $2, 3$, lying on the Legendre elliptic curve

$$y^2 = x(x-1)(x-\lambda),$$

may become torsion for an infinity of complex values of λ.

This may be viewed as a 'relative' case of the celebrated conjecture of Manin-Mumford (proved by Raynaud in 1983); it also appeared as a special case of conjectures raised independently by Pink around 2005. A finiteness answer has been recently proved for Masser's question.

In the talk we shall discuss this and several more recent developments, especially for pencils of abelian surfaces; we shall present in some detail the main points of the proof-method, which admits applications also to other related issues.