Boğaziçi
MATH COLLOQUIUM

Sporadic Points on Modular Curves

Özlem Ejder
Colorado State University

Abstract:

The points on the modular curve $X_1(n)$ roughly classifies the pairs (E,P) (up to isomorphism) where E is an elliptic curve and P is a point of order n on E. We call a closed point x on $X_1(n)$ sporadic if there are only finitely many closed points of degree at most $\deg(x)$; hence classifying sporadic points on $X_1(n)$ is closely related to determining the torsion subgroups of elliptic curves over a degree d field. When $d = 1$ or 2, Mazur and Kamienny?s work show that there are no sporadic points of degree d on $X_1(n)$. In this talk, I will discuss the sporadic points of arbitrary degree. This is joint with A. Bourdon, Y. Liu, F. Odumudu and B. Viray.

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