

## abstract

JOINT IAS/PU NUMBER THEORY SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

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We proved with Umberto Zannier that there are at most finitely many complex numbers  $\lambda \neq 0, 1$  such that two points on the Legendre elliptic curve  $y^2 = x(x-1)(x-\lambda)$  with coordinates  $x=2$  and  $x=3$  both have finite order. However we still do not know how to find these  $\lambda$  effectively (there are probably none). We discuss various extensions of this result, some of them effective. For example some comments of Serre encouraged us to show that there are no  $\lambda$  at all for coordinates  $x=u$  and  $x=v$  when the complex numbers  $u, v$  are not both algebraic with  $1, u, v$  linearly dependent over the field of rationals and  $uv(u-1)(v-1)(u-v) \neq 0$ . The proof needs a close study of what may be called "bicyclotomic polynomials".