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**Linear relations on families of powers of elliptic curves**

(joint work with L. Capuano)

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  $E_\lambda$  of equation  $y^2 = x(x-1)(x-\lambda)$ . This is a special case of conjectures about Unlikely Intersections of semiabelian schemes, proved later in the two dimensional abelian 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  $E_\lambda$ . This is a special case of a more general result in the framework of the conjectures mentioned above.