1070-11-202   **Alvaro Lozano-Robledo*** (`alvaro.lozano-robledo@uconn.edu`), Department of Mathematics, 196 Auditorium Road, University of Connecticut, U-3009, Storrs, CT 06269. *On the field of definition of p-torsion points on elliptic curves over the rationals.*

Let $S_{\mathbb{Q}}(d)$ be the set of primes p for which there exists a number field K of degree $\leq d$ and an elliptic curve E/K, with $j(E) \in \mathbb{Q}$, such that the order of the torsion subgroup of $E(K)$ is divisible by p. In this talk, we give bounds for the primes in the set $S_{\mathbb{Q}}(d)$. Moreover, we determine $S_{\mathbb{Q}}(d)$ for all $d \leq 22$, and give a conjectural formula for all $d \geq 1$. If Serre's uniformity question is answered positively, then our conjectural formula is valid for all sufficiently large d. (Received February 11, 2011)