# Growth of torsion on elliptic curves from Q to the maximal abelian extension

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Monday, October 17 at 4:15 pm
111 Cummington Mall, MCS B21
Tea and cookies in MCS 144 at 4:00 pm

**Abstract:** Torsion of an elliptic curve over a number field is finite due to the Mordell-Weil theorem. However, even in certain infinite extensions of $\mathbb{Q}$ we have that torsion is finite. Ribet proved that, when base extended to the maximal abelian extension of $\mathbb{Q}$, the torsion of an elliptic curve over $\mathbb{Q}$ is finite. In this talk, we show that the size of such torsion subgroups is in fact uniformly bounded as we range over all curves $E/\mathbb{Q}$. Further, we give a classification of all possible torsion structures appearing in this way.