

Boğaziçi
MATH GRAD SEMINAR

**Torsion of Rational Elliptic Curves over the
Galois Extensions of \mathbb{Q}**

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Abstract: Mazur's celebrated theorem gives a complete classification of the torsion subgroups $E(\mathbb{Q})_{\text{tors}}$ for elliptic curves E/\mathbb{Q} . This result inspired the broader problem of classifying $E(L)_{\text{tors}}$ for elliptic curves E/L , where L is a field of characteristic zero. In this talk, I will first review results from the literature and some variants of this problem. I will then focus on the case where L/\mathbb{Q} is a Galois extension, outlining our methods and presenting two families of results: when $L = \mathbb{Q}(\zeta_p)$ for a prime p , and when L is a \mathbb{Z}_p -extension of a quadratic field K .

Date : Wednesday, , 2025

Time: 15:30

Place: Online, also TB130