

# METU Mathematics General Seminar

## Settled elements in arboreal Galois groups

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### **Abstract**

Over the rational numbers, it is conjectured that the number of irreducible factors of the iterates of a polynomial is eventually constant. How do the iterates of a polynomial behave over finite fields? This brings us to the notion of settledness.

In this talk, we will discuss two settled objects: a settled polynomial and a settled tree automorphism. The connection between them is given via Frobenius elements acting in the Galois groups of polynomial iterates. These groups, called arboreal Galois groups, are naturally subgroups of the automorphism group of a regular binary tree formed by the iterated preimages of 0 under a polynomial.

We will explore how the dynamics and geometry of a polynomial shape the arithmetic and group-theoretic properties of these arboreal Galois groups and discuss recent progress on a conjecture of Boston and Jones concerning settledness for quadratic polynomials.

**Date:** Thursday, 4 June 2026

**Time:** 15:40

**Place:** Gündüz İkedâ Seminar Room