

Abelian and cyclotomic points in backward orbits of rational functions

Wednesday, 20 September 2023 10:00 (1 hour)

Given a rational function ϕ in one variable and a point α of the projective line over a number field K , one can ask how many points in the backward orbit of α belong to a cyclotomic, or more in general abelian, extension of K . Conjecturally, there should be only finitely many such points, unless the map ϕ is of a very special form. In this talk, I will explain how one can approach this problem via two very different techniques, one relying on unlikely intersection methods and the other on group theoretical arguments. The combination of these techniques allows to prove several cases of the aforementioned conjecture. This is based on joint works with Pagano and Ostafe-Zannier.

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