



Analysis Seminar

Title: Generalized Pseudo-Anosov Maps from Holomorphic Dynamics

Speaker: Mariam Alhawaj (Ahlia University Bahrain)

Date: Thu 17th September 2026 at 3:00PM

Location: S3.67 - Science South

Abstract: In this talk, I will present a result where I develop a new connection between the dynamics of quadratic polynomials on the complex plane and the dynamics of homeomorphisms of surfaces. In particular, given a quadratic polynomial, we show that one can construct an extension of it which is a generalized pseudo-Anosov homeomorphism.

Generalized pseudo-Anosov means the foliations have infinite singularities that accumulate on finitely many points. We determine for which quadratic polynomials such an extension exists. My construction is related to the dynamics on the Hubbard tree, which is a forward-invariant subset of the filled Julia set that contains the critical orbit.

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