

Hyperbolic components and iterated monodromy of polynomial skew-products of \mathbb{C}^2

mercredi 25 juin 2025 16:00 (50 minutes)

In this talk, we study the families $Sk(p, d)$ of polynomial skew-products $f(z, w) = (p(z), q(z, w))$ of degree $d > 1$, where $p(z)$ is fixed and $q(z, w)$ varies.

Astorg and Bianchi proved that the notion of hyperbolic components is meaningful in this setting, and they studied these components in detail for $d = 2$.

I will present my recent work on hyperbolic components in higher degrees. For the family $Sk(z^d, d)$, I will present an iterated monodromy technique, valid for every $d > 1$, that associates an algebraic braid to each hyperbolic component. More precisely, for each component, the Julia set of any map in the component contains an algebraic braid whose isotopy class remains constant as the map varies in the component.

These algebraic braids define a new invariant of both algebraic and topological nature for hyperbolic components. In the quadratic case, these algebraic braids encode enough information to recover the classification results obtained by Astorg and Bianchi.

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