Automorphisms of $\mathbb{C}^2$ with a cycle of escaping Fatou components with disjoint and hyperbolic limit sets

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In this talk, we investigate the dynamics of transcendental Hénon maps, which are a special class of automorphisms of $\mathbb{C}^2$ of the form $F(z, w) = (f(z) - aw, z)$, where $f : \mathbb{C} \longrightarrow \mathbb{C}$ is an entire transcendental function and a is a complex constant.

This particular form allows us to find analogies with the results from transcendental dynamics in one complex variable, moreover transcendental Hénon maps provide a natural extension of the well-studied class of polynomial Hénon maps (where f is a polynomial).

More precisely we show the existence of a special class of trascendental Hénon maps which have a cycle of escaping Fatou components. This special maps have two distinct limit functions on this cycle, both of which have generic rank 1 and each Fatou component in the cycle has two disjoint and hyperbolic limit sets on the line at infinity.