

Limits of polynomial-like quadratic rational maps

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We study certain hyperbolic components in moduli space of quadratic rational maps. Disjoint type hyperbolic components are components consisting of maps where the two critical points belong to attracting basins of disjoint attracting periodic cycles.

Epstein proved boundedness of disjoint type hyperbolic components, where neither attractor is a fixed point. By contrast, Petersen had previously shown that in the polynomial-like case, where one or both attracting cycle is a fixed point, these components are unbounded.

The unboundedness observed by Petersen involves pinching deformations. It is somewhat surprising that allowing twisting deformations can give a different answer. We will characterize the boundedness/unboundedness behavior of all sequences in polynomial-like disjoint type components, and in the process discover interesting phenomena occurring at the boundary.

This is joint work with Adam Epstein.