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An explicit bound for uniform perfectness of Julia sets

A compact set C in the Riemann sphere is called *uniformly perfect* if the moduli of those annuli in the complement which separate C are bounded by some constant M. Mañé-da Rocha and Hinkkanen proved that the Julia set of a rational map of degree ≥ 2 is uniformly perfect, but their proofs seem to provide no explicit bounds.

In this talk, an explicit bound M for uniform perfectness will be given in terms of hyperbolic geometry of the Fatou set. As the simplest case, quadratic polynomials will be discussed in more detail.