Playing with trees in holomorphic dynamics

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Abstract

We are interested in the family of cubic polynomials with a critical point of a fixed period $n$. John Milnor conjectured that this curve is irreducible. The proof that I propose for the case $n = 4$ demonstrates a very unexpected relation between two trees that have been introduced in holomorphic dynamics to encode the combinatorics of two completely different kind of dynamical systems: the escaping trees (DeMarco-McMullen-Pilgrim) and Hubbard trees. We will be attentive during this talk to the non experts and we will define all of these tools.