

Dynamics Seminar

Spider Algorithms and Dynamics on Cosine Spider Spaces

Schinella D'Souza (University of Michigan)

Abstract: The spider algorithm of Hubbard and Schleicher determines when a finite combinatorial pattern is realized by a quadratic polynomial. The algorithm involves iteration on a space called spider space by a map called a spider map. In this talk, we will generalize this algorithm to a special one-parameter family of Chebyshev polynomials that approximate a one-parameter cosine family. We will construct a spider algorithm for any degree polynomial in this family as well as for cosine. The adaptation of the algorithm to cosine will lead to strange behaviour of the spider map that does not occur in the polynomial case and we will discuss some examples and consequences of this behaviour.

Wednesday, November 8 at 4:00 PM in 427 SEO