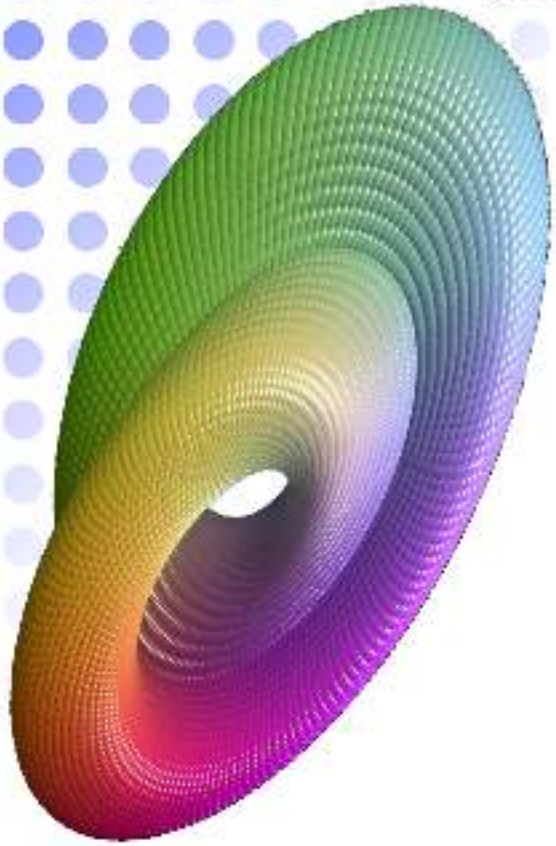
Michigan Math Club

Thursday at 4pm in the Commons

Free Pizza and Pop



Dynamics and Sarkovskii's Theorem

Ben Weiss

Abstract for 24 March 2011

Given a function f(x), and a number A, what does the orbit {A, f(A), f(f(A)), f(f(f(A))), ...} look like? Is it finite? If so how big is it? For a fixed function, what size sets can occur with different numbers? We'll discuss what happens when f(x) is a polynomial with integer or rational coefficients. I'll also state and prove Sarkovskii's Theorem, which classifies possible sizes of these sets for any continuous real function.