

2007:13
Självständigt arbete i matematik
Matematiska institutionen
Stockholms universitet

Per Alexandersson: Some observations on Fatou sets of rational functions

Sammanfattning

This paper is about repeated iterations of rational functions in the complex plane. While exploring some properties of the Fatou set by computer simulations, I encountered an interesting pattern. After generating more data, I became more and more sure that there was a correlation between the Fatou set of a rational function, and its derivatives on the iterated functions. Trying to say it in a very long sentence; my research strongly suggests that in most cases, the bounded components of the Fatou set lies in the limit of the points where the absolute value of the derivative of the iterated function as the number of iterations grows.