



Analysis Seminar

Title: Classifying simply connected wandering domains

Speaker: Vassiliki Evdoridou (The Open University)

Date: Tue 19th November 2019 at 4:20PM

Location: Seminar Room SCN 1.25

Abstract: Let f be a transcendental entire function and U be a connected component of the Fatou set of f . If U is not eventually periodic then it is called a wandering domain. Sullivan's celebrated result showed that rational functions have no wandering domains. Contrary to rational functions, transcendental entire functions can have wandering domains, simply or multiply connected. A few years ago, a detailed description of the dynamical behaviour in multiply connected wandering domains was given by Bergweiler, Rippon and Stallard, which leaves open the case of simply connected wandering domains. In this talk we give two different ways of classifying simply connected wandering domains, in terms of the hyperbolic distances between iterates and also in terms of the behaviour of orbits in relation to the boundaries of the wandering domains. These two classification theorems combined give rise to nine different types of simply connected wandering domains. We discuss the result which is based on approximation theory and allows us to construct examples of all nine types.

This is joint work with A.-M. Benini, N. Fagella, P. Rippon and G. Stallard.