



The University of Mississippi
Department of Mathematics

Analysis Seminar

Dr. Sasha Kocic
The University of Mississippi

4:00 P.M., Thursday, October 13
Hume 321

Title: Rigidity in dynamics: in memory of J.-C. Yoccoz

Abstract: One of the world leaders in dynamical systems theory, Jean-Christophe Yoccoz died last month (see the link below). I will give a general mathematical audience talk on rigidity in dynamics, an area to which he contributed a lot.

Rigidity theory of circle diffeomorphisms is a classic topic in dynamical systems largely developed by Herman and Yoccoz. Rigidity, in this context, refers to a phenomenon that every two maps, within a given topological equivalence class, are smoothly conjugate to each other (i.e., the same up to a smooth coordinate change). A natural approach to Herman's theory involves renormalization, a powerful idea that connects many different areas of mathematics and physics. I will discuss the main ideas of renormalization and rigidity theory and give an overview of the results (including some of my own) for circle maps and generalized interval exchange transformations (the latter being generalizations of circle maps, recently introduced by Marmi, Moussa and Yoccoz). The talk will be fully understandable to graduate students without any previous knowledge in dynamics.