

YMC2004 TALK ABSTRACT

Gwyneth Harrison-Shermoen

Wesleyan University

Title: A Search for  $f$ -Invariant  $\epsilon$ -Scrambled Sets

Description:

It has been shown that  $\epsilon$ -scrambled sets exist for all and only chaotic and non-uniformly non-chaotic maps. The goal of this project is to find necessary and sufficient conditions for the existence of  $f$ -invariant  $\epsilon$ -scrambled sets. Du showed in his January 2004 paper that all turbulent maps have  $f$ -invariant  $\epsilon$ -scrambled sets. We have shown that if a map has such a set, then it must be chaotic. We continue to look for further restrictions on the type of map that can have such a set. For example, must it have a periodic point of odd period? Periodic points for all periods?