



Mês de: JULHO 2013

SEMINÁRIO DE SISTEMAS DINÂMICOS

Dia 22 de Julho (segunda-feira), às 15 horas, na Sala B3-01

How to do dynamics on overlapping self similar sets and measures

Thomas Kempton

(Utrecht University)

Abstract:

Given a self similar set X generated by an iterated function system without overlaps, such as the middle third cantor set, it is easy to define an expanding dynamical system under which the set is invariant. One does this applying the contractions of the IFS in reverse, mapping scaled down copies of X onto the whole set X . In the case of the middle third cantor set this corresponds to the map $T(x)=3x \pmod{1}$. Using T it is easy to deduce various properties of the Cantor set. Attempting to apply this technique directly to self similar sets and measures with overlaps does not work, since it gives rise to functions which are not well defined in the overlap region. In this talk we will define a simple higher dimensional dynamical system which partially remedies this situation, and which allows us to draw conclusions about self similar measures with overlaps and the Hausdorff measure of slices through fractals. We are also able to give some equidistribution results beta expansions of real numbers and relate these to the question of the absolute continuity of Bernoulli convolutions.

Local:
INSTITUTO PARA A INVESTIGAÇÃO INTERDISCIPLINAR
UNIVERSIDADE DE LISBOA
Av. Prof. Gama Pinto, 2
1649-003 Lisboa

