Mês de:　　　Março 2010

SEMINÁRIO DE SISTEMAS DINÂMICOS

Dia 10 de Março (quarta-feira), às 14h30, na Sala B1-01

"Chaotic Cycling"

Alexandre Rodrigues

(CMUP)

Abstract:

During this seminar, we study the dynamics of a generic vector field in the neighbourhood of a heteroclinic cycle of non-trivial periodic trajectories whose invariant manifolds meet transversely. The main result is the existence of chaotic double cycling: there are trajectories that follow the cycle making any prescribed number of turns near the periodic solutions, for any given bi-infinite sequence of turns. We analyse the existence of infinitely many heteroclinic and homoclinic subsidiary connections, which give rise to a heteroclinic network with infinitely many cycles and chaotic dynamics near them. We also present an example of a vector field in a 5-dimensional sphere with a heteroclinic cycle that has this property, constructed using a general method to lift vector fields. This is a joint work with Isabel Labouriau and Manuela Aguiar, in the setting of my PhD.

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