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CENTRO DE MATEMÁTICA E APLICAÇÕES FUNDAMENTAIS
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Mês de: MARÇO 2014

SEMINÁRIO DE SISTEMAS DINÂMICOS

Dia **7 de Março** (sexta-feira), às **14:30h**, na **Sala B3-01**

Symmetry Breaking and Heteroclinic Tangencies

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(CMUP)

Abstract:

In this talk, we study some global aspects of the bifurcation of an equivariant family of volume-contracting vector fields on the three-dimensional unitary sphere. The vector fields have two saddle-foci of different Morse index, connected in a cycle that is structurally stable within a class of equivariant vector fields. The cycle contains a two-dimensional connection that persists as a transverse intersection of invariant surfaces under partial symmetry-breaking. Gradually breaking the symmetry in a two-parameter family we get a wide range of dynamical behaviour: an attracting periodic trajectory; other heteroclinic trajectories; homoclinic orbits; n-pulses; suspended horseshoes and cascades of bifurcations of periodic trajectories near an unstable homoclinic cycle of Shilnikov type and linked homoclinic orbits. We also investigate the mechanism of the emergence of heteroclinic tangencies coexisting with transverse connections. We find persistent suspended hyperbolic horseshoes accompanied by attracting periodic trajectories with long periods. This is a joint work with Isabel Labouriau.

HOSP.
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Entrada

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