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Mês de: MAIO 2013

SEMINÁRIO DE SISTEMAS DINÂMICOS

Dia 3 de Maio sexta-feira), às 10h, na Sala B3-01

Dynamics of systems with a homoclinic figure-eight

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Abstract:

We consider 2D diffeomorphisms having a homoclinic figure-eight to a dissipative saddle and we study the rich dynamics that they exhibit under a periodic forcing. In particular, we give a complete description the bifurcation diagram (using topological methods, quadratic and cubic tangencies, return maps, cascades of sinks,...) and we detect the different kinds of attractors that exist (and can coexist) in the system. Note that we look for global phenomena in a fundamental domain which captures all the non-trivial facts. To this end, the analysis of the bifurcation global problem is illustrated and complemented by the numerical study of a return model which, despite being simple, has a ``universal" character and, moreover, provides significant quantitative data of the dynamical phenomena taking place. The results that we shall present can be found in: Richness of dynamics and global bifurcations in systems with a homoclinic figure-eight. Nonlinearity 26 (3): 621-679, 2013.

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