U LISBOA | UNIVERSIDADE DE LISBOA

CENTRO DE MATEMÁTICA E APLICAÇÕES FUNDAMENTAIS
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Mês de: MARÇO 2014

SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 6 de Março (quinta-feira), às 14h, na Sala B3-01

Chaotic dynamics for switched nonlinear planar systems in presence of an equilibrium changing its nature.

Maurizio Garrione
(FCUL-CMAF-PTDC/MAT/113383/2009)

Abstract:

We study the dynamics originated by the superposition of two autonomous systems in the plane for which the origin is a local center and a saddle, respectively.

We will show that if we alternatively switch the two systems maintaining each one for a sufficiently large time, then the overall Poincaré map induces chaotic dynamics on two symbols near the origin.

In particular, under the T-periodicity of the switching (for T large), there is existence of T-periodic solutions and subharmonics of any order.

We will briefly provide an outline of the proof and an insight into the main topological tool used for its fulfillment, the so called stretching along the paths method.

Apoio: FCT Fundação para a Ciência e a Tecnologia **PEst-OE/MAT/UI0209/2013**

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