

UNICAMP – IMECC
Departamento de Matemática

Seminário de Sistemas Dinâmicos e Estocásticos

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Título: Additive noise does not destroy a pitchfork bifurcation

Data: Sexta-feira, 22 de março de 2013, 13h30min

Local: Sala 321 do IMECC

Resumo. It is well-known from [CF98: Crauel and Flandoli, “Additive noise destroys a pitchfork bifurcation”, *Journal of Dynamics and Differential Equations* **10** (1998), 259-274] that adding noise to a system with a deterministic pitchfork bifurcation yields a unique random attracting fixed point with negative Lyapunov exponent for all parameters. Based on this observation, [CF98] concludes that the deterministic bifurcation is destroyed by the additive noise.

However, we show that there is qualitative change in the random dynamics at the bifurcation point. We associate this bifurcation with a breakdown of both uniform attraction and equivalence under uniformly continuous topological conjugacies, and with non-hyperbolicity of the dichotomy spectrum at the bifurcation point.

This is joint work with Mark Callaway, Doan Thai Son, and Martin Rasmussen (all at Imperial College London).

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