UNICAMP – IMECC
Departamento de Matemática

Seminário de Sistemas Dinâmicos e Estocásticos

Expositor: T. Pereira (Imperial College)

Título: Collective dynamics in heterogeneous random networks

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Local: Sala 321 do IMECC

Resumo. We study expanding maps on compact manifolds interacting in a heterogeneous random network. Heterogeneity means that some nodes in the network are massively connected nodes, while the majority of nodes are only poorly connected nodes. We provide a probabilistic approach to describe the emergent collective properties in heterogeneous random networks in the limit of weak interaction. For almost every random network we prove that the high dimensional network problem can be reduced to a few macroscopic equations amenable to treatment. Such reduction is intimately related to the ergodic properties of the expanding maps. We then unravel the onset of collective dynamics at various levels of the network structure.

This is a joint work with Jeroen Lamb and Sebastian van Strien.