

Seminário de sistemas dinâmicos e estocásticos

Departamento de Matemática - IMECC - UNICAMP

More is less: Improving connections leads to network failure

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Resumo:

We study synchronisation in directed networks of differential equations with interaction akin to diffusion. In many important applications the stability of synchronised states is vital for the functioning of the network. We show that, in contrast to undirected networks, the improvement of the coupling structure, for instance the introduction of a new edge, can lead to a network failure. Furthermore, we relate this effect to topological properties of the underlying digraph.

Data: Sexta-feira, 17 de outubro de 2014, 15:15hs.

Local: Sala 321 do IMECC.

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