Seminário de sistemas dinâmicos e estocásticos

IMECC - UNICAMP

Título: Minimal jointly uniform attractor for nonautonomous random dynamical systems.

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Resumo:

We introduce a notion of minimal uniform attractor for nonautonomous random dynamical systems, which depends jointly on time and on a random parameter. Several examples are provided to illustrate the concept and to compare it with existing notions of uniform attractors in the literature. We further apply the abstract theory to nonautonomous random differential equations with a non-compact symbol space. In particular, we develop a method to compactify the symbol space, by adapting techniques from the theory of deterministic nonautonomous differential equations. We also establish the stability of the minimal jointly uniform attractor by exploiting the relationship between deterministic and random dynamics. Finally, we show that such structures arise naturally in stochastic differential equations whose noise terms carry additional time dependence, by establishing a topological conjugacy between the resulting stochastic flows and suitable random differential equations.