

Nonautonomous and stochastic dynamical systems: an introduction with applications

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In this talk we will introduce the basic tools of the theory of nonautonomous attractors for handling both non-autonomous and random dynamical systems. We will show how both problems can be analyzed in a unified formulation thanks to the concept of cocycle. We will also emphasize on the different effects that different kind of noise can produce on the asymptotic behaviour of the solutions. Our results will be illustrated with some basic academic examples as well as some others which can be interesting from the applications point of view (such as, e.g. Chemostats models, reaction-diffusion equations, Navier-Stokes, etc.).