

Abstract

This talk contains three parts: (1) Lyapunov exponents for infinite dimensional dynamical systems; (2) the existence of SRB measures and their properties for infinite dimensional dynamical systems and SRB measures for parabolic PDEs undergoing Hopf bifurcations driven by a periodic forcing with applications to the Brusselator; (3) Positive entropy implying the existence of horseshoes for infinite dimensional dynamical systems. This is based on the joint works with Wen Huang, Zeng Lian, Peidong Liu, Qiudong Wang, and Lai-Sang Young.