Fractal Dimension Problems in Dynamical Systems

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Time：Thu, Jan. 15th, 15:00-16:00
Venue: Room 110, SCMS

Abstract:

This talk presents a series of fractal geometric problems arising in dynamical systems. In the setting of smooth dynamical systems, I will discuss the Hausdorff and box-counting dimensions of certain strange attractors, including the graphs of Weierstrass-type functions and solenoidal attractors. I will then move to the dimension theory for stationary measures of iterated function systems, focusing on recent progress on high-dimensional Bernoulli convolutions and the Furstenberg measures on the projective line. These results will demonstrate how tools from dynamical systems, additive combinatorics, random walks, and multiscale analysis can be used to study dimension problems.