Contribution ID : **4** Type : **not specified**

Markov partition for hyperbolic systems with singularities

Wednesday, 8 December 2021 14:00 (1:15)

Content

For the hyperbolic systems with singularities, Markov partitions are rather delicate to construct because of the fragmentation of the phase space by singularities. In this talk, we investigate a broad class of uniformly hyperbolic systems with singularities, which includes the Sinai dispersing billiards and their small perturbations due to external forces and nonelastic reflections with kicks and slips. Under the standard hypotheses (H1)-(H4), we establish countable Markov partitions by constructing "perfect" hyperbolic product sets with exponential tail. Such structure immediately implies the exponential decay of correlations, the central limit theorem and other advanced stochastic properties. We also obtain Markov partitions for certain nonuniformly hyperbolic systems, which includes the semi-dispersing billiards and the Bunimovich billiards. This is a joint work with Fang Wang and Hong-Kun Zhang.

Summary

Presenter(s) : CHEN, Jianyu (Soochow University, China)

Session Classification : Workshop