1141-37-20 **Jianyu Chen*** (jchen@math.umass.edu), Department of Mathematics and Statistics, Lederle Graduate Research Tower 1030, 710 N. Pleasant Street, Amherst, MA 01003, and **Fang Wang** and **Hong-Kun Zhang**. *Markov Partition and Thermodynamic Formalism for Chaotic Billiards.*

This is a joint work with Fang Wang and Hong-Kun Zhang.

In this talk, we investigate the chaotic billiards and other related hyperbolic systems with singularities, and construct a Markov partition of the phase space with countable states. Based on such special structure, we further establish the thermodynamic formalism for the family of geometric potentials, by adapting the inducing scheme developed by Pesin, Senti and Zhang. Stochastic properties of the corresponding equilibrium measures immediately follow, including the existence and uniqueness, the decay rates of correlations and the central limit theorem.

All the results apply to Sinai dispersing billiards, and their small perturbations due to external forces and nonelastic reflections with kicks and slips. (Received June 14, 2018)