



Department of Mathematical Sciences welcomes
Hong-Kun Zhang
University of Massachusetts Amherst

Diffusion properties for Lorentz gas

ABSTRACT:

We investigate the diffusion and statistical properties of several types of Lorentz gas, whose scatterers have flat points. This includes modifications of billiards with cusps, dispersing billiards on a torus with infinite horizon, etc. The decay rates of correlations are proven to depend on the degree of the flat points, which varies from $1/n^a$, for $a > 0$. The stochastic processes generated by the billiard map experience different behaviors varying from normal diffusion, super-diffusion, or Levy stable diffusions.

ABOUT THE SPEAKER:

Hong-Kun Zhang is an associate professor of mathematics at the University of Massachusetts Amherst. She works on dynamical systems and ergodic theory; stochastic processes and probability theory; financial mathematics and risk management; statistical analysis for time series; and stochastic networks. Hong-Kun received her Ph.D. from the University of Alabama-Birmingham in 2005.

March 9, 2018

Hosted by:
Dr. Roeder

Tea begins at 3:00
in LD 259

Research Topic
begins at 3:30
in LD 229

