M A T H E M A T I C A L P H Y S I C S S E M I N A R

Rutgers University
Hill Center - Room 705

Propagation of Chaos for a simple model of electric conduction with a Gaussian Thermostat

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Thursday, May 9, 2013 - 2:00pm

Abstract

We will start from a system of N pointlike particles in a dispersing billiard under the influence of an electric field and a Gaussian thermostat. We will argue that many interesting characteristic of the system are preserved if one replace the determistic collision between particles and obstacles with Poisson distributed random collision. We will then show that the stochastic process obtained in this way propagate chaos so that the one particle distribution satisfies a Boltzmann-like equation.