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SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 2 de fevereiro (quinta-feira), às 14h30, sala 6.2.33

Phase transition for the heat equation with boundary conditions

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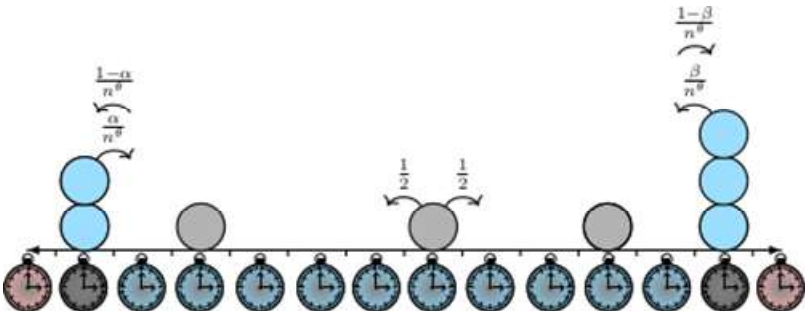
Resumo/Abstract: In this talk I will present a toy model for the heat conduction, which consists of a stochastic dynamics in contact with stochastic reservoirs.

In this model, particles evolve on the set of sites $\{1,2,\dots,N-1\}$ to which we call the bulk, according to the following dynamics. Each particle waits a random clock, which is exponentially distributed, and after a ring of the clock it jumps to one of its nearest neighbours with probability $1/2$. At the reservoirs, particles can enter or leave the system at a rate which is slower with respect to the rates in the bulk. The parameter that rules the boundary rates is $\theta \in \mathbb{R}$.



The main purpose of the talk is to analyse the macroscopic PDE's governing the space-time evolution of the density of particles for each regime of θ and to discuss recent results for the case in which particles can give long jumps.

Joint work with C. Bernardin (U. Nice) and B.Oviedo (U. Nice).

Seminário financiado por Fundos Nacionais através da FCT – Fundação para a Ciência e a Tecnologia no âmbito do projeto UID/MAT/04561/2013

Local: FCUL – Edf. C6 - Piso 2, 6.2.33