

Chilean Probability Seminar

Speaker: Daniel Remenik (Universidad de Chile)

Title: Solution of the polynuclear growth model.

Abstract:

The polynuclear growth model (PNG) is a model for crystal growth in one dimension. It is one of the most basic models in the KPZ universality class, and in the droplet geometry, it can be recast in terms of a Poissonized version of the longest increasing subsequence problem for a uniformly random permutation. In this talk, we will show how the multipoint distributions of the model can be expressed through solutions of a classical integrable system, the two-dimensional non-Abelian Toda lattice. In the appropriate scaling limit, these solutions become solutions of the KP equation, an integrable dispersive PDE which arises in a similar way for the KPZ fixed point. The proof is based on a new Fredholm determinant formula for the transition probabilities of PNG with general initial data, which is built out of hitting probabilities of a continuous-time simple random walk, the invariant measure of the process.

La sesión del 18 de mayo del Seminario de Probabilidades de Chile se realizará de forma híbrida en la sala multimedia del 6to Piso del Centro de Modelamiento Matemático.

Para quienes deseen asistir al seminario de forma remota, el enlace para conectarse al seminario es:

Unirse a la reunión Zoom

<https://reuna.zoom.us/j/84521834914?pwd=OTZ6Y0NWM3pYTGtTbEt3c0luTG96UT09>

ID de reunión: 845 2183 4914

Código de acceso: 997973

Wednesday, May 18, 16:15 hrs (Chilean time).