

Seminario
Conjunto Modelamiento Estocástico / Núcleo Milenio MESCD.

Expositor
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Título

Non-intersecting Brownian bridges and the Laguerre Orthogonal Ensemble

Resumen:

Consider N non-intersecting Brownian bridges, all starting from 0 at time $t = 0$ and returning to 0 at time $t = 1$. The Airy₂ process is defined as the motion of the top path (suitably rescaled) in the large N limit. K. Johansson proved the remarkable fact that the supremum of the Airy₂ process minus a parabola has the Tracy-Widom GOE distribution from random matrix theory. In this talk, I will present a result which shows that the squared maximal height of the top path in the case of finite N is distributed as the top eigenvalue of a random matrix drawn from the Laguerre Orthogonal Ensemble. This result can be thought of as a discrete version of Johansson's result, and provides an explanation of how the Tracy-Widom GOE distribution arises in the KPZ universality class. The result can also be recast in terms of the probability that the top curve of the stationary Dyson Brownian motion hits an hyperbolic cosine barrier. This is joint work with Daniel Remenik.

Fecha: Viernes 13 de nov. 17:00 hrs

Lugar: Sala John Von Neumann, 7mo piso, Centro de Modelamiento Matemático,
U. Chile, Beauchef 851, Torre Norte.