



UNIVERSITÄT
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Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF
MELBOURNE

Seminar

Bielefeld - Melbourne Random Matrices

Gia Bao Nguyen

KTH Stockholm

On the distribution of the maximum of the Airy process with wanderers

Consider a system of N non-intersecting Brownian bridges on the time interval $[-1,1]$ such that the first $N-m$ paths start and end at the origin and the m remaining top paths go between arbitrary positions. The Airy process with m wanderers is defined as the motion of these Brownian particles near the edge curve $\mathcal{C} := \{(t, \sqrt{2N(1-t^2)}) : t \in [-1,1]\}$ in the large N limit. In this talk, we focus on the distribution of the maximum of the Airy process with wanderers minus a parabola, which provides a $2m$ -parameter deformation of the Tracy-Widom GOE distribution. We provide a Fredholm determinant formula for this distribution function. We also discuss the connection with KPZ fluctuations, as well as some results on relations with Painlevé II and other PDEs.

This is based on joint work with Daniel Remenik and Karl Liechty.

Wednesday, 27 January 2021, 0900 hrs CET

Zoom Konferenzschaltung— Please contact Thorsten Neuschel
(thorsten.neuschel@math.uni-bielefeld.de) for details regarding access