



**UNIVERSITÄT  
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



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# Seminar

Bielefeld - Melbourne Random Matrices

## Guilherme Silva

Universidade de Sao Paulo

### Multiplicative statistics of random matrices and the integro-differential Painlevé II equation

In this talk we consider a large family of multiplicative statistics of eigenvalues of hermitian random matrix models with a one-cut regular potential. We show that they converge to an universal multiplicative statistics of the Airy<sub>2</sub> point process which, in turn, is described in terms of a particular solution to the integro-differential Painlevé II equation. The same solution to this integro-differential equation appeared for the first time in the description of the narrow wedge solution to the KPZ equation, so our results connect the KPZ equation in finite time with random matrix theory in an universal way.

The talk is based on joint work with Promit Ghosal (MIT).

**Wednesday, 31 August 2022, 0900 hrs CEST**

Via zoom

[www.physik.uni-bielefeld.de](http://www.physik.uni-bielefeld.de)