



**UNIVERSITÄT  
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF  
MELBOURNE

# Seminar

Bielefeld - Melbourne Random Matrices

## Alexandre Krajenbrink

SISSA Trieste

### A journey from classical integrability to the large deviations of the Kardar-Parisi-Zhang equation

In this talk, I will revisit the problem of the large deviations of the Kardar-Parisi-Zhang (KPZ) equation in one dimension at short time by introducing a novel approach which combines field theoretical, probabilistic and integrable techniques. My goal will be to expand the program of the weak noise theory, which maps the large deviations onto a non-linear hydrodynamic problem, and to unveil its complete solvability through a connection to the integrability of the Zakharov-Shabat system.

This is based on the work arXiv:2103.17215

**Wednesday, 30 June 2021, 0900 hrs CEST**

Zoom Conference Call— Please contact Gernot Akemann  
(akemann@physik.uni-bielefeld.de) for details regarding access