



**UNIVERSITÄT  
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF  
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# Seminar

Bielefeld - Melbourne Random Matrices

## Sungsoo Byun

### Planar symplectic ensembles: from scaling limits to Wronskian structures

In this talk, I will discuss complex eigenvalues of non-Hermitian random matrices with symplectic symmetry, which are known to form Pfaffian point processes. In particular, I will present various scaling limits of symplectic ensembles and explain their unified integrable structure of Wronskian form. Examples include edge scaling limits of the Ginibre ensemble (with boundary confinements) and bulk/edge scaling limits of the elliptic Ginibre ensemble in the almost-Hermitian regime.

Beyond standard universality classes, I will also introduce scaling limits of the Mittag-Leffler ensemble at the singularity. Furthermore, for symplectic ensembles with general external potentials, I will present the characterization of translation invariant scaling limits by virtue of rescaled mass-one and Ward's equations.

This talk is based on two joint works: one with Gernot Akemann and Nam-Gyu Kang and the other with Markus Ebke and Seong-Mi Seo.

**Wednesday, 27 October 2021, 0900 hrs CEST**

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