



**UNIVERSITÄT
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF
MELBOURNE

Seminar

Bielefeld - Melbourne Random Matrices

Mariya Shcherbyna

Institute for Low Temperature Physics Kharkiv
and Bielefeld University

Super symmetry approach to the deformed Ginibre ensemble: Universality of local regime

We consider a complex Ginibre ensemble of random matrices with a deformation $H=H_0+A$, where H_0 is a Gaussian complex Ginibre matrix and A is a rather general deformation matrix. The analysis of such ensemble is motivated by many problems of random matrix theory and its applications. We use the Grassmann integration methods to obtain integral representation of spectral correlation functions of the first and the second order and discuss the analysis of these representations with a saddle point method. Applications of such an analysis to the problems of local regime of the deformed Ginibre ensemble will be discussed.

**Wednesday, 17 May 2023,
0900 hrs CET**

Zoom Conference call— Please contact Lucas Hackl
(Lucas.Hackl@unimelb.edu.au) for details regarding access