



**UNIVERSITÄT  
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF  
MELBOURNE

# Seminar

Bielefeld - Melbourne Random Matrices

## Sungsoo Byun

Korea Institute for Advanced Study

### **Partition functions of determinantal and Pfaffian Coulomb gases with radially symmetric potentials**

In this talk, I will discuss two-dimensional Coulomb gases at a specific temperature with free or Neumann boundary conditions, which can be realized as eigenvalues of random normal matrices or planar symplectic ensembles. I will present the asymptotic expansion of the partition functions when the underlying field is radially symmetric. Notably, our findings stress that the expansion contains topological data of the associated droplet. This is based on joint work with Nam-Gyu Kang and Seong-Mi Seo.

**Wednesday, 12 April 2023,  
0900 hrs CET**

Zoom Conference call— Please contact Lucas Hackl  
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