



**UNIVERSITÄT
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF
MELBOURNE

Seminar

Bielefeld - Melbourne Random Matrices

Aron Wennman

Tel Aviv University

The hole event for Gaussian complex zeros and the emergence of quadrature domains

The Gaussian Entire Function (GEF) is a distinguished random Taylor series with independent complex Gaussian coefficients, whose zero set is invariant with respect to isometries of the plane. The topic of this talk is the zero distribution of the GEF, conditioned on the event that no zero lies in a given (large) region. For circular holes

Ghosh and Nishry observed that as the radius of the hole tends to infinity, the density of zeros vanishes not only on the given hole, but also on an annulus beyond the (rescaled) hole — a 'forbidden region' emerges.

We are concerned with the shape of the forbidden region for general simply connected holes. I plan to discuss how one can study this problem through a type of constrained obstacle problem, and why the forbidden region belongs to a class of algebraic domains -- the quadrature domains for subharmonic functions.

Based on joint work with Alon Nishry.

Wednesday, 02 December 2020, 0900 hrs CET

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