



**UNIVERSITÄT
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF
MELBOURNE

Seminar

Bielefeld - Melbourne Random Matrices

Professor Peter Forrester

University of Melbourne

Properties of the structure function $S(k;\beta)$ in RMT

The structure function, also known as the spectral form factor, is fundamental to the bulk scaled state in RMT. In the case of the circular β ensemble, we discuss a functional equation satisfied by this quantity, which relates β to $4/\beta$. Its small k expansion has coefficients which are polynomials in $\beta/2$. Exact results for special β allow these to be computed up to 9th order. Their zeros have been conjectured to all lie on the unit circle in the complex $\beta/2$ plane, and have an interlacing property. A recent study of the structure function for even β using linear differential equations of degree $\beta + 1$ allows the 10th order polynomial to be computed, and also provides extra insight into the functional forms for the classical values $\beta = 1, 2$ and 4 .

Wednesday, 19 August 2020, 0900 hrs CEST

Zoom Konferenzschaltung— Please contact Anas Rahmann
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