



**UNIVERSITÄT
BIELEFELD**



Faculty of Physics



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THE UNIVERSITY OF
MELBOURNE

Seminar

Bielefeld - Melbourne Random Matrices

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University of Macau

Smallest Eigenvalue of Large Hankel Matrices at Critical Point: Comparing a Conjecture with parallelized computation

The Hankel matrices are matrices of moments (see Heine, Handbuch der Kugelfunctionen, 1878) that play a fundamental role in approximation theory. It transpired that the logarithm of the $n \times n$ Hankel determinants – depending on parameters in the weight – plays an important role in finite n aspects of integrable systems. The early pioneers are Jimbo, Miwa, Mori, Sato, Ueno, Okamoto, McCoy, Tracy, and Widom. Since Hankel matrices are moments of positive continuous functions, they form positive definite quadratic forms. Since Hankel matrices are moments of positive continuous functions, they form positive definite quadratic forms. We like to find the smallest eigenvalue, with the aid of polynomials orthogonal with respect to the weight.

This talk will focus on the weight characterised by a parameter $\beta > 0$, $w(x) = \exp(-x^\beta)$, $0 \leq x < \infty$.

Wednesday, 16 September 2020, 0900 hrs CEST

Zoom Konferenzschaltung— Please contact Anas Rahmann
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