



**UNIVERSITÄT
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF
MELBOURNE

Seminar

Bielefeld - Melbourne Random Matrices

Miguel Tierz

Universidade de Lisboa

Schur expansion of random-matrix reproducing kernels

We explain how to obtain expansions of reproducing kernels of the Christoffel-Darboux type in terms of Schur polynomials. The method is simply based on evaluations of averages of characteristic polynomials and Schur polynomials in random matrix ensembles. We explicitly compute some new Schur average and the ensuing expansion of the random matrix kernel. In addition to classical and q -deformed cases on the real line, we use extensions of Dotsenko-Fateev integrals to obtain expressions for kernels on the complex plane. We will comment also on a known interplay between Wronskians of Laguerre polynomials, Painlevé tau functions and conformal block expansions, now viewed in relation to the Schur expansion discussed.

Wednesday, 21 July 2021, 0900 hrs CEST

Zoom Conference Call— Please contact Anas Rahman
(anas.rahman@live.com.au) for details regarding access