



**UNIVERSITÄT
BIELEFELD**



Faculty of Physics



Faculty of Mathematics



THE UNIVERSITY OF
MELBOURNE

Seminar

Bielefeld - Melbourne Random Matrices

Guido Mazzuca

SISSA, Trento

Gaussian alpha ensemble and an application to Toda lattice

In my talk I will introduce a tridiagonal random matrix models related to the classical Gaussian β -ensemble in the high temperature regime, i.e. when the size N of the matrix tends to infinity with the constraint that $\beta N = 2\beta$ constant, $\beta > 0$. I will show how to explicitly compute the mean density of states and the mean spectral measure for this ensemble. Finally, I will apply this result to compute the mean density of states for the periodic Toda lattice in thermal equilibrium.

This talk is based on my recent preprint “On the mean Density of States of some matrices related to the beta ensembles and an application to the Toda lattice”, arXiv preprint:2008.04604, and partly on a joint work with T.Grava, A. Maspero, and A. Ponso “Adiabatic invariants for the FPUT and Toda chain in the thermodynamic limit”, Communications in Mathematical Physics, 380 (2020), pp. 811–851. DOI: 10.1007/s00220-020-03866-2.

Wednesday, 09 December 2020, 0900 hrs CET

Zoom Konferenzschaltung— Please contact Thorsten Neuschel
(thorsten.neuschel@math.uni-bielefeld.de) for details regarding access