



**UNIVERSITÄT  
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# Seminar

Bielefeld - Melbourne Random Matrices

## Manjunath Krishnapur

Indian Institute of Science, Bangalore

### On absolute continuity of limiting spectral distributions of random Toeplitz and Hankel matrices

While the method of moments is an effective method of proving the existence of limiting spectral distributions for many models of random matrices, it does not reveal properties of the limiting distribution such as absolute continuity or unimodality.

In this talk we work with random Toeplitz and Hankel matrices and show the absolute continuity of the corresponding limiting distributions. The existence of the limiting distribution was already shown by Hammond-Miller and Bryc-Dembo-Jiang (~2003) and the absolute continuity was settled for the Toeplitz case by Sen and Virag (2011). The result is new for the Hankel matrix.

Our methods also work for Toeplitz and Hankel matrices defined by certain other groups such as  $Z^d$ . The key idea is to write the random matrix under consideration as a sum of two or more independent random circulant-like matrices.

All this is joint work with Anish Mallick.

**Wednesday, 21 October 2020, 0900 hrs CEST**

Zoom Konferenzschaltung— Please contact Anas Rahmann  
([anas.rahman@unimelb.edu.au](mailto:anas.rahman@unimelb.edu.au)) for details regarding access