


XVII Brunel–Bielefeld Workshop on RMT and Applications

Center for Interdisciplinary Research – ZiF, Bielefeld University

Organisers: G. Akemann (Bielefeld), I. Krasovsky (Imperial), D. Savin (Brunel), I. Smolyarenko (Brunel)

 Zoom Meeting-ID and Passcode: to be communicated per email

Friday, 17 December 2021:

08:55–09:00	(Bielefeld Time, UTC+1)	WELCOME & OPENING	Zoom
09:00–09:40	Joshua Feinberg	<i>Pseudo-Hermitian random matrices: theory and practice</i>	
09:45–10:25	Naftali Smith	<i>Full counting statistics for interacting trapped fermions and random matrices</i>	
10:30–11:00		COFFEE BREAK	
11:00–11:40	Johannes Alt	<i>Localization and delocalization in Erdős-Rényi graphs</i>	
11:45–12:25	Gaultier Lambert	<i>On quantum statistics transmutation and the Ginibre ensemble</i>	
12:30–13:15		LUNCH BREAK	
13:15–14:45	POSTER SESSION I	<i>“live” previews (13:15–13:55) followed by discussions in breakout rooms</i>	
14:45–15:00		COFFEE BREAK	
15:00–15:40	Anna Maltsev	<i>Random matrix theory as a tool for analysing biological data</i>	
15:45–16:25	Stefan Zohren	<i>A random matrix theory approach to neural network training</i>	
16:30–17:00		COFFEE BREAK	
17:00–17:40	Tsampikos Kottos	<i>Wave-matter interactions in the proximity of Non-Hermitian singularities</i>	
17:45–18:25	Emma Bailey	<i>Evidence of random matrix corrections for the large deviations of Selberg’s central limit theorem</i>	
18:30–19:00		INFORMAL AFTER-TALK DISCUSSIONS	

Saturday, 18 December 2021:

08:55–09:00	(Bielefeld Time, UTC+1)	JOINING IN	Zoom
09:00–09:40	Gabriele Gradoni	<i>Mutual information statistics and channel hardening in RIS-assisted wireless MIMO communication systems</i>	
09:45–10:25	Sanjaye Ramgoolam	<i>Permutation invariant RMT and applications to language data</i>	
10:30–11:00		COFFEE BREAK	
11:00–11:40	Fanny Augeri	<i>Fluctuations of the characteristic polynomial of random Jacobi matrices</i>	
11:45–12:25	Sungsoo Byun	<i>Lemniscate ensembles with spectral singularity</i>	
12:30–13:15		LUNCH BREAK	
13:15–14:45	POSTER SESSION II	<i>“live” previews (13:15–13:55) followed by discussions in breakout rooms</i>	
14:45–15:00		COFFEE BREAK	
15:00–15:40	Christophe Charlier	<i>Planar Fisher-Hartwig singularities and gap probabilities in the random normal matrix model</i>	
15:45–16:25	Francesco Mezzadri	<i>TBA</i>	
16:30–17:00		CONCLUDING DISCUSSION & CLOSING	

- Breakout Room 1: **Dan Betea**
Multicritical symplectic and orthogonal matrix integrals
- Breakout Room 2: **Joakim Cronvall**
An explicit charge-charge correlation function at the edge of a two-dimensional Coulomb droplet
- Breakout Room 3: **Huw Day**
Fishing for answers: a stochastic geometry problem on 2D Poisson points
- Breakout Room 4: **Patrik Demjan**
Unitary n -point correlations
- Breakout Room 5: **Markus Ebke**
Universal scaling limits of the symplectic elliptic Ginibre ensemble
- Breakout Room 6: **Ana Flack**
Truncated linear statistics in jellium model
- Breakout Room 7: **Johannes Forkel**
Moments of moments of the characteristic polynomial of random orthogonal and symplectic matrices
- Breakout Room 8: **Alan Groot**
Potential theory, critical measures and S-curves on the torus
- Breakout Room 9: **Jonas Jalowy**
The Wasserstein distance to the circular law
- Breakout Room 10: **Anastasis Kafetzopoulos**
Local Marchenko-Pastur law
- Breakout Room 11: **Aritra Laha**
Exact mean root fidelity
- Breakout Room 12: **Jinyeop Lee**
Real eigenvalues of elliptic random matrices

- Breakout Room 1: **Alex Little**
Compact Lie groups and Non-Intersecting Brownian motion
- Breakout Room 2: **Svetlana Malysheva**
Linear spectral statistics of half-heavy tailed Wishart random matrices
- Breakout Room 3: **Pierre Mergny**
Large deviation for the top eigenvalue of the sum of random matrices
- Breakout Room 4: **Patricia Păbler**
A surmise for non-Hermitian matrices and Log-gas description of complex symmetry classes
- Breakout Room 5: **Roman Riser**
Universalities in pseudo-Hermitian random matrices
- Breakout Room 6: **Renaud Rivier**
Edge of the Laplacian for Erdős-Renyi graphs
- Breakout Room 7: **Isao Sauzedde**
Unitary matrices under a Brownian dynamics at equilibrium
- Breakout Room 8: **Albert Senen Cerda**
On the spectral norm of block Markov chain random matrices
- Breakout Room 9: **Henry Taylor**
Quantum transport and random matrix theory
- Breakout Room 10: **Alexander Van Werde**
Singular value distribution for the empirical transition matrices of block Markov chains
- Breakout Room 11: **Harriet Walsh**
Counting maps with random partitions
- Breakout Room 12: **Lu Wei**
Second-order statistics of fermionic Gaussian states