

Workshop III: Random Matrices and Free Probability Theory

Monday May 14, 2018

- 8:00–8:50 *Check-in/Breakfast (hosted by IPAM)*
- 8:50–9:00 *Welcome and Opening Remarks*
- 9:00–9:50 **H.T. Yau** (Harvard University)
Universality of random band matrices and quantum unique ergodicity
- 10:00–10:20 *Break*
- 10:20–11:10 **Roland Speicher** (Saarland University)
Rational functions of variables having maximal free entropy dimension
- 11:20–11:40 *Break*
- 11:40–12:30 **Todd Kemp** (University of California, San Diego (UCSD))
The Spectral Envelope of Multiplicative Brownian Motion
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:20 **Mark Rudelson** (University of Michigan)
Invertibility of the adjacency matrices of random graphs
- 3:30–3:50 *Break*
- 3:50–4:40 **Jiaoyang Huang** (Harvard University)
Extreme eigenvalue distributions of sparse Erdős–Rényi graphs
- 5:00–6:30 *Poster Session & Reception (Hosted by IPAM)*

Tuesday May 15, 2018

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Sourav Chatterjee** (Stanford University)
Gauge-string duality in lattice gauge theories
- 10:00–10:20 *Break*
- 10:20–11:10 **Pierre Youssef** (Université de Paris VII (Denis Diderot))
On the norm of Gaussian random matrices
- 11:20–11:40 *Break*

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- 11:40–12:30 **Benjamin Landon** (Harvard University)
Local statistics of Dyson Brownian motion
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:20 **Marc Potters** (University of California, Los Angeles (UCLA))
On the overlaps between eigenvectors of correlated random matrices
- 3:30–3:50 *Break*
- 3:50–4:40 **Guillaume Cébron** (Université de Toulouse III (Paul Sabatier))
The large- N limits of conditional expectation

Wednesday May 16, 2018

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Ioana Dumitriu** (University of Washington)
Sparse block matrices: local laws and eigenvector delocalization
- 10:00–10:20 *Break*
- 10:20–11:10 **Nicholas Cook** (University of California, Los Angeles (UCLA))
The maximum of the characteristic polynomial for a random permutation matrix
- 11:20–11:40 *Break*
- 11:40–12:30 **Konstantin Tikhomirov** (Princeton University)
Circular law for very sparse non-Hermitian random matrices
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:20 **Yoann Dabrowski** (Université de Lyon I)
Laplace deviation principle for free brownian motion and free entropy
- 3:30–3:50 *Break*
- 3:50–4:40 **Mariya Shcherbina** (National Academy of Sciences of Ukraine)
Large block properties of the entanglement entropy of free disordered fermions

Thursday May 17, 2018

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Dan-Virgil Voiculescu** (University of California, Berkeley (UC Berkeley))
Noncommutative extreme values based on the Ando-max.
- 10:00–10:20 *Break*

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- 10:20–11:10 **Olivier Guédon** (Université de Marne-la-Vallée)
On some operator norms of random matrices
- 11:20–11:40 *Break*
- 11:40–12:30 **Bill Helton** (University of California, San Diego (UCSD))
Free (Real) Algebraic Geometry and Free Convexity
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:20 **Benoit Collins** (Kyoto University)
Strong convergence for random permutations
- 3:30–3:50 *Break*
- 3:50–4:40 **Roland Bauerschmidt** (University of Cambridge)
Local Kesten–McKay Law for random regular graphs

Friday May 18, 2018

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Ofer Zeitouni** (Weizmann Institute of Science)
Convergence and outliers for perturbations of Toeplitz matrices
- 10:00–10:20 *Break*
- 10:20–11:10 **Elizabeth Meckes** (Case Western Reserve University)
Random matrices with prescribed eigenvalues
- 11:20–11:40 *Break*
- 11:40–12:30 **Fanny Augeri** (Weizmann Institute of Science)
Heavy-tail phenomena in the large deviations of random matrices
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:20 **Mylene Maida** (Universite de Lille)
Concentration for Coulomb gases and Coulomb transport inequalities
- 3:30–3:50 *Break*
- 3:50–4:40 **Florent Benaych-Georges** (Université de Paris V (René Descartes))
Extreme eigenvalues of Erdős-Rényi graphs

