

## 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*

