

Workshop I: Expected Characteristic Polynomial Techniques and Applications

Monday April 9, 2018

- 8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00–9:50 **Nikhil Srivastava** (University of California, Berkeley (UC Berkeley))
Square convolutions and regular expanders
- 10:00–10:25 *Break*
- 10:25–11:15 **Adam Marcus** (Princeton University)
Rectangular convolutions and biregular expanders
- 11:25–11:50 *Break*
- 11:50–12:40 **Vadim Gorin** (Massachusetts Institute of Technology)
Convolutions and fluctuations: free, finite, quantized.
- 12:50–2:30 *Lunch (on your own)*
- 2:30–3:20 **Raj Rao Nadakuditi** (University of Michigan)
Free component analysis
- 3:30–3:55 *Break*
- 3:55–4:45 **Nick Ryder** (University of California, Berkeley (UC Berkeley))
Developments with b - q and q - q finite free convolutions

Tuesday April 10, 2018

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Thomas Liggett** (University of California, Los Angeles (UCLA))
Approximating Multiples of Strong Rayleigh Random Variables
- 10:00–10:25 *Break*
- 10:25–11:15 **Octavio Arizmendi** (Center of Investigations in Mathematics (CIMAT))
Cumulants for finite free convolution
- 11:25–11:50 *Break*

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- 11:50–12:40 **Doron Puder** (Tel Aviv University)
Group Representations and Expected Characteristic Polynomials
- 12:50–2:30 *Lunch (on your own)*
- 2:30–3:20 **Alexandra Kolla** (University of Colorado Boulder)
Spectra of Symmetric Matrix Signings
- 3:30–3:55 *Break*
- 3:55–4:45 **Nik Weaver** (Washington University in St. Louis)
What is quantum graph theory?
- 5:00–6:30 *Reception (Location: IPAM Lobby)*

Wednesday April 11, 2018

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Alexander Gamburd** (The Graduate Center, CUNY)
Expected Characteristic Polynomials from Classical Groups: Proofs and Applications
- 10:00–10:25 *Break*
- 10:25–11:15 **Pierre Youssef** (Université de Paris VII (Denis Diderot))
Restricted invertibility with and without interlacing
- 11:25–11:50 *Break*
- 11:50–12:40 **Shayan Oveis Gharan** (University of Washington)
Stability Preservers and Applications
- 12:50–2:30 *Lunch (on your own)*
- 2:30–3:20 **Mohan Ravichandran** (Mimar Sinan University)
Multi-paving
- 3:30–3:55 *Break*
- 3:55–4:45 **Marcin Bownik** (University of Oregon)
On Akemann-Weaver Conjecture

Thursday April 12, 2018

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Terence Tao** (University of California, Los Angeles (UCLA))
Heat flow, zeroes, and the de Bruijn-Newman constant
- 10:00–10:25 *Break*
- 10:25–11:15 **Sorin Popa** (University of California, Los Angeles (UCLA))
Approximating freeness under constraints
- 11:25–11:50 *Break*
- 11:50–12:40 **Jonathan Leake** (University of California, Berkeley (UC Berkeley))
Extending the Borcea-Brändén Characterization
- 12:50–2:30 *Lunch (on your own)*
- 2:30–3:30 *Problem Session*
- 3:30–3:55 *Break*
- 3:45–5:00 *Open Discussion*

Friday April 13, 2018

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Amin Saberi** (Stanford University)
Simply Exponential Approximation of the Permanent of Positive Semidefinite Matrices
- 10:00–10:25 *Break*
- 10:25–11:15 **Alexander Barvinok** (University of Michigan)
The computational complexity of mixed discriminants
- 11:25–11:50 *Break*
- 11:50–12:40 **Peter Varju** (University of Cambridge)
Irreducibility of random polynomials
- 12:50–2:30 *Lunch (on your own)*
- 2:30–3:20 **Nima Anari** (Stanford University)
Entropy, Log-Concavity, and a Deterministic Approximation Algorithm for Counting Bases of Matroids
- 3:30–3:55 *Break*

