The Abdus Salam International Centre for Theoretical Physics

1964 40th anniversary 2004

# Workshop on Random Matrix Theory: Condensed Matter, Statistical Physics and Combinatorics

Organizer(s): O. Agam, B.L. Altshuler, P. Wiegmann
Local Organizer(s): V.E. Kravtsov
Trieste - Italy, 28 June 2004 - 2 July 2004

**Venue: Adriatico Guest House Kastler Lecture Hall**

## Final programme

**DAY 1 - MONDAY** (Room:Adriatico Guest House Kastler Lecture Hall)

**28 June 2004**

**08:30 - 10:30** (Room: Adriatico Guest House (Lower Level 1))
--- REGISTRATION ---

**10:30 - 11:15** **Efetov, K.** / *Ruhr-Universität Bochum*
**Superbosonization for disordered and chaotic systems**

**11:15 - 12:00** **Bogomolnyi, E.** / *Université Paris-Sud*
**Spectral statistics of pseudo-integrable maps**

**12:00 - 12:45** **Brouwer, P.** / *Cornell University*
**Wave function statistics in open chaotic billiards**

**12:45 - 15:00** (Room: Adriatico Guest House Cafeteria)
--- LUNCH BREAK ---

**15:00 - 16:00** **Beenakker, C.W.J.** / *University of Leiden*
**Breakdown of RMT at finite Ehrenfest time**

**16:00 - 16:30** (Room: Adriatico Guest House (Terrace))
--- COFFEE BREAK ---

**16:30 - 17:30** **Larkin, A.** / *University of Minnesota*
**Ehrenfest oscillation in levels statistic**

**DAY 2 - TUESDAY** (Room:Adriatico Guest House Kastler Lecture Hall)

**29 June 2004**

**09:00 - 09:45** **Pruisken, A.M.**
**Quantum criticality in the Quantum Hall regime**

**09:45 - 10:30** **Its, A.** / *Indiana University Purdue University*
**Painleve' transcendents and random matrices**

**10:30 - 11:00** (Room: Adriatico Guest House (Terrace))
--- COFFEE BREAK ---

**11:00 - 11:45** **Kanzieper, E.** / *Holon Academic Institute of Technology*
**Towards exact integrability of replica field theories**

**11:45 - 12:30** **Verbaarschot, J.J.** / *State University of New York at Stony Brook*
**Replicas do the trick**

**12:30 - 15:00** (Room: Adriatico Guest House Cafeteria)
--- LUNCH BREAK ---

**15:00 - 16:00** **Weidenmüller, H.** / *Max-Planck-Institut für Kernphysik Heidelberg*
**Random-matrix theory and chaos in self-bound quantal many-body systems**

**16:00 - 16:30** (Room: Adriatico Guest House (Terrace))
--- COFFEE BREAK ---

**16:30 - 17:15** **Fyodorov, Y.** / *Brunel University*
**Complexity of random energy landscapes, glass transition and absolute value of spectral determinant of random matrices**

**DAY 3 - WEDNESDAY** (Room:Adriatico Guest House Kastler Lecture Hall)

**30 June 2004**

**09:00 - 09:45** **Bettelheim, E.** / *The Hebrew University of Jerusalem*
**Dispersive regularization approach to the Saffman-Taylor problem**

**09:45 - 10:30** **Hastings, M.** / *Los Alamos National Labs*
**Exact multifractal spectra for arbitrary Laplacian random walks using iterated conformal mappings**

**10:30 - 11:00** (Room: Adriatico Guest House (Terrace))
--- COFFEE BREAK ---

**11:00 - 11:45** **Skvortsov, M.** / *L.D. Landau Institute for Theoretical Physics*
**Quantum interference effects in energy absorption by closed mesoscopic systems**

**11:45 - 12:30** **Smolyarenko, I.** / *Cavendish Laboratory - Cambridge University*
**Parametric Random Matrix Theory**

**12:30 - 15:00** (Room: Adriatico Guest House Cafeteria)
--- LUNCH BREAK ---

**15:00 - 15:45** **Zabrodin, A.** / *Institute of Theoretical and Experimental Physics, Moscow*
**Random matrices and Laplacian growth**

**15:45 - 16:15** (Room: Adriatico Guest House (Terrace))
--- COFFEE BREAK ---

**16:15 - 17:15** **Cardy, J.L.** / *University of Oxford*
**2d critical behaviour, random conformal maps, and Dyson's Brownian motion**

**19:00 - 20:30** (Room: Adriatico Guest House (Lower Level 1))
**POSTER SESSION**

## **DAY 4 - THURSDAY** (Room:Adriatico Guest House Kastler Lecture Hall)

**1 July 2004**

**09:00 - 09:45** **Yevtushenko, O.M.** / *the Abdus Salam ICTP*
**Spectral statistics of almost-diagonal Gaussian random matrices**

**09:45 - 10:30** **Tracy, C.A.** / *University of California at Davis*
**Differential equations for Dyson processes**

**10:30 - 11:00** (Room: Adriatico Guest House (Terrace))
--- COFFEE BREAK ---

**11:00 - 11:45** **Hikami, S.** / *University of Tokyo*
**Relevance of random matrix theory to random laser**

**11:45 - 12:45** (Room: Adriatico Guest House Cafeteria)
--- LUNCH BREAK ---

**14:15 - 15:00** **Feinberg, J.** / *Technion - Israel Institute of Technology*
**The collective quantum dynamics of the eigenvalue plasma of large normal matrices**

**15:00 - 16:00** **Spohn, H.** / *Technische Universität München*
**Growth processes and random matrices**

**16:00 - 16:30** (Room: Adriatico Guest House (Terrace))
**COFFEE BREAK**

**16:30 - 17:15** **Mehlig, B.** / *Gothenburg University/Chalmers*
**Caustics in turbulent aerosols**

## **DAY 5 - FRIDAY** (Room:Adriatico Guest House Kastler Lecture Hall)

**2 July 2004**

**09:00 - 09:45** **Akemann, G.** / *CEA Saclay*
**Ensembles of non-Hermitian matrices and their applications in QCD**

**09:45 - 10:30** **Semenoff, G.** / *The University of British Columbia*
**Thermodynamics of the pp-wave**

**10:30 - 11:00** (Room: Adriatico Guest House (Terrace))
--- COFFEE BREAK ---

**11:00 - 11:45** **Kazakov, V.** / *Ecole Normale Supérieure Paris*
**1/N-expansion and non-perturbative effects in matrix integrals**