

« Disordered Quantum Systems »
Paris, April 23th – July 20th, 2012

Conference on
« Disordered Quantum Systems »
June 18th – 22nd, 2012
ENS - Salle Dussane
45, Rue D'Ulm, 75005 Paris

Registration on Monday will take place for Salle Dussane at the corner of rue Erasme and rue d'ULM



Organizers :

Boris Altshuler (Columbia University), **Benoît Doucot** (University Paris 6, LPTHE), **Marc Mézard** (University Paris-Sud, LPTMS), **Gora Shlyapnikov** (University Paris-Sud, LPTMS)

Chairs :

I. Aleiner (Columbia University), **B. Altshuler** (Columbia University), **B. Doucot** (University Paris 6, LPTHE), **I. Lerner** (University of Birmingham), **V. Pokrovsky** (Texas A&M University), **G. Shlyapnikov** (University Paris-Sud, LPTMS), **A. Tsvelik** (Brookhaven National Laboratory)

Speakers :

I. Aleiner (Columbia University), **G. Biroli** (IPhT CEA Saclay), **V. Bouchiat** (LPS, Orsay), **C. Castellani** (Università di Roma La Sapienza), **L. Cugliandolo** (University Paris 6, LPTHE), **V. Falco** (Lancaster University), **M. Fink** (LOA – ESPCI, Paris), **S. Flach** (Max Planck Ins.), **A. Georges** (CPHT – École Polytechnique), **M. E. Gershenson** (Rutgers University), **T. Giamarchi** (University of Geneva), **L. Glazman** (Yale University), **S. Gueron** (LPS, Orsay), **J. Imbrie** (University of Virginia), **V. Josse** (Institut d'Optique, Palaiseau), **F. Klopp** (IMJ, UPMC), **A. Lagendijk** (FOH Institute, Amsterdam), **C. Marcus** (Harvard/Copenhagen), **A. Millis** (Columbia University), **G. Modugno** (LENS, University of Florence), **L. Ponomarenko** (University of Manchester), **H. Pothier** (SPEC CEA, Saclay), **M. Segev** (SPEC CEA, Saclay), **D. Shahar** (Weizmann Institute), **D. Stone** (Yale University), Amherst), **C. Texier** (LPS, Orsay), **B. Van Tiggelen** (LPMMC, Grenoble), **A. Yazdany** (Princeton University)



Institut Henri Poincaré – Centre Emile Borel, 11 rue Pierre et Marie Curie, 75005 Paris
Téléphones : 01 44 27 67 64 / 67 75 – Fax : 01 44 07 09 37

Program

Lectures (except Tuesday afternoon) will take place at Salle Dussane :
45, rue d'ULM, 75005 Paris

and all the others events : Coffee or Tea break, Poster sessions and Cocktail will take place at IHP :

11, rue Pierre et Marie Curie, 75005 Paris

Monday June 18th

08.30 am – 08.30 am Registration (corner of rue Erasme and rue d'Ulm)

08.50 am Opening of the conference

"Quantum fluids, superconductors, and waves in disorder" Chair G. Shlyapnikov

09.00 am – 09.50 am

T. Giamarchi

Dirty bosons in one dimension.

09.50 am – 10.40 am

G. Modugno

Experiments with interacting bosons in 1D quasiperiodic lattices.

10.40 am – 11.20 am

Coffee Break - IHP Ground floor

11.20 am – 12.10 am

V. Josse

Localization of Ultracold Atoms in Disorder : 3D Localization and Coherent Backscattering.

12.10 pm – 01.00 pm

M. E. Gershenson

Superconductor-insulator transition in Josephson junction arrays.

01.00 pm – 02.30 pm

Lunch

02.30 pm – 03.20 pm

A. Millis

Superconductivity and the Pseudogap in the two dimensional Hubbard Model and in copper-oxide superconductors.

03.20 pm – 04.10 pm

D. Stone

Random lasers and coherent random absorbers.

04.10 pm – 04.50 pm

Tea break – IHP Ground floor

04.50 pm – 05.40 pm

S. Flach

Nonlinear Waves in Disordered Systems.

05.40 pm – 06.30 pm

A. Lagendijk

Classical waves: from transverse localization to Lifshitz tails.

Tuesday June 19th "Mesoscopic structures" Chair B. Altshuler

Morning lecture at Salle Dussane

09.00 am – 09.50 am

L. Glazman

Electron backscattering in a generic helical edge.

09.50 am – 10.40 am

I. Aleiner

Localization and critical diffusion of quantum dipoles in two dimensions.



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| <i>10.40 am – 11.20 am</i> | <i>Coffee break – IHP Ground floor</i> | |
| <i>11.20 am – 12.10 pm</i> | C. Marcus | Proximity effect in semiconductor nanowires. |
| <i>12.10 pm – 01.00 pm</i> | C. Castellani | Superfluid density and current patterns in disordered superconductors. |
| <i>01.00 pm – 03.00 pm</i> | Lunch | |
| <i>Afternoon lecture at IHP Hermite Amphitheatre</i> | | |
| <i>03.00 pm – 03.50 pm</i> | H. Pothier | Energy relaxation and dephasing in diffusive wires: a review. |
| <i>03.50 pm – 04.40 pm</i> | C. Texier | Quantum transport and electronic interactions in mesoscopic metallic networks. |
| <i>04.40pm – 05.30 pm</i> | A. Yazdany | Visualizing Disordered Quantum Systems on the Nanoscale. |
| <i>05.30pm – 06.10pm</i> | <i>Tea break – IHP Ground floor and Poster Session IHP – Ground floor in Rooms 01 & 05 from 5.30pm to 7pm</i> | |
| Wednesday June 20th "Spin and electron glasses" Chair I. Aleiner | | |
| <i>09.00 am – 09.50 am</i> | L. Cugliandolo | From non equilibrium quantum Brownian motion to impurity dynamics in exotic quantum liquid baths. |
| <i>09.50 am – 10.40 am</i> | G. Biroli | Difference between level statistics, ergodicity and localization transition on the Bethe lattice. |
| <i>10.40 am – 11.30 am</i> | D. Shahar | Little-Parks Oscillations in an Insulator. |
| Thursday June 21st "Mathematical problems in disordered systems" Chair A. Tsvelik | | |
| <i>09.00 am – 09.50 am</i> | F. Klopp | Mathematical results on the statistics for eigenlevels and resonances in large one-dimensional ergodic systems. |
| <i>09.50 am – 10.40 am</i> | J. Imbrie | A mathematical approach to many-body localization. |
| <i>10.40 am – 11.20 am</i> | <i>Coffee break – IHP Ground floor</i> | |
| "Strongly correlated systems" Chair I. Lerner | | |
| <i>11.20 am – 12.10 pm</i> | A. Georges | Interaction-induced impeding of decoherence and anomalous diffusion in a cold atom system. |
| <i>12.10 pm – 01.00 pm</i> | V. Gurarie | Chiral spin liquid |
| <i>01.00 pm – 03.00 pm</i> | Lunch | |

"Physics of graphene" Chair V. Pokrovsky

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| 03.00 pm – 03.50 pm | V. Falko | Weak and strong localisation in graphene. |
| 03.50 pm – 04.40 pm | S. Gueron | The Superconducting Proximity Effect through graphene from zero field to the Quantum Hall regime. |

04.40 pm – 05.20 pm [Tea break and Poster session – IHP – Ground floor in Rooms 01 & Cafétéria](#)

06.30 pm Cocktail – IHP Ground floor

Friday June 22nd "Physics of graphene" (continuation)

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| 09.00 am – 09.50 am | L. Ponomarenko | Electronic properties of graphene double-layer structures. |
| 09.50 am – 10.40 am | V. Bouchiat | Electrical control of superconductivity in tin decorated graphene. |

10.40 am – 11.20 am [Coffee break – IHP Ground floor](#)

"Waves in disorder" Chair B. Doucot

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| 11.20 am – 12.10 pm | B. Van Tiggelen | 3D Anderson localization of Cold Atoms. |
| 12.10 pm – 01.00 pm | M. Fink | Controlling waves in space and time at subwavelength scales through complex media. |
| 01.00 pm – 01.50 pm | M. Segev | Anderson localization of Light. |



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