

**Programme on “Combinatorics, Geometry, and Physics”**

organized by

**Abdelmalek Abdesselam (U of Virginia),**  
**Christian Krattenthaler (U Vienna),**  
**Adrian Tanasă (Paris North U),**  
**Fabien Vignes-Tourneret (CNRS - U Lyon 1)**  
**June 2 - July 31, 2014**

**Workshop Schedule****“2D-Quantum Gravity and Statistical Mechanics”****June 16 - 20, 2014****• Monday, June 16, 2014**09:00 **Opening & Registration**09:30 – 10:30 **Neal Stoltzfus***Ribbon graph constructions, generating functions and topological rank polynomial applications*10:30 – 11:00 *coffee/tea break*11:00 – 12:00 **Jérémie Bouttier***Distances in random planar maps and discrete integrability*12:00 – 14:00 *lunch break*14:00 – 15:00 **Dan Romik***Algebraic and bijective combinatorics in the  $O(1)$  loop model: constant term identities and commutation of the transfer matrices*15:00 – 15:30 *break*15:30 – 16:30 **François David***Planar maps, circle patterns, conformal point processes and 2D gravity***• Tuesday, June 17, 2014**09:30 – 10:30 **Mireille Bousquet-Mélou***The Potts model on planar maps*10:30 – 11:00 *coffee/tea break*11:00 – 12:00 **Béatrice de Tilière***From the critical Ising model to spanning trees*12:00 – 14:00 *lunch break*14:00 – 15:00 **Roger Behrend***Multiply-refined enumeration of alternating sign matrices*15:00 – 15:30 *break*

15:30 – 16:30 **Bertrand Duplantier**  
*Liouville quantum gravity, KPZ and Schramm-Loewner evolution*

• **Wednesday, June 18, 2014**

09:30 – 10:30 **Harold Steinacker**  
*From matrix models to the theory of fundamental interactions*

10:30 – 11:00 *coffee/tea break*

11:00 – 12:00 **Jeanne Scott**  
*Laurent expansions for twisted Plcker coordinates via dimer partition functions*

12:00 – 14:00 *lunch break*

14:00 – 15:00 **Iain Moffatt**  
*Ribbon graphs, their polynomials, and delta-matroids*

15:00 – 15:30 *break*

15:30 – 16:30 **Aldo Procacci**  
*Witness trees in the Moser-Tardos algorithmic Lovsz Local Lemma and Penrose trees in the hard-core lattice gas*

16:30 – 16:45 *break*

16:45 – 17:45 **Tony Guttmann**  
*Unusual critical behaviour of some lattice and combinatorial models*

• **Thursday, June 19, 2014**

**Public Holiday - no lectures**

20:00 **Social Evening: Heuriger “Feuerwehr Wagner”**  
*Address: Grinzing Strasse 53, 1190 Wien, phone: (+43 1) 3202442, <http://www.feuerwehrwagner.at>*

• **Friday, June 20, 2014**

09:30 – 10:30 **Joanna Ellis-Monaghan**  
*Graph theoretical expressions for statistical mechanics models*

10:30 – 11:00 *coffee/tea break*

11:00 – 12:00 **Ilse Fischer**  
*Extreme diagonally and antidiagonally symmetric alternating sign matrices*

12:00 – 14:00 *lunch break*

14:00 – 15:00 **Vladimir Kazakov**  
*Summing planar graphs in zero, one, two, three and four dimensions*

15:00 – 15:30 *break*

15:30 – 16:30 **Xavier Viennot**  
*Heaps of pieces and 2D Lorentzian quantum gravity*

**All lectures take place in the ESI Boltzmann Lecture Hall**