



VICTOR ROTHSCHILD MEMORIAL SYMPOSIA

THE INSTITUTE FOR ADVANCED STUDIES  
AT  
THE HEBREW UNIVERSITY OF JERUSALEM

With the Support of  
The Clay Mathematics Institute; Research Director: David A Elwood  
Microsoft Research,  
Department of Mathematics at The Hebrew University of Jerusalem,  
and  
The Weizmann Institute

14th Jerusalem Midrasha Mathematicae

PROBABILITY and GEOMETRY

THE MATHEMATICS of ODED SCHRAMM

December 15 – 23, 2009

General Director: **Peter Sarnak** (Princeton University)  
Codirectors: **Itai Benjamini** (Weizmann Institute), **Noam Berger**, **Gil Kalai** (The Hebrew University) and **Wendelin Werner** (Université Paris-Sud)

## PROGRAM

### Tuesday, December 15

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|-------------|---|
| 8:30-9:30   | <i>Registration</i>   |
| 9:30-10:30  | <b>Yuval Peres</b> (Microsoft)<br><i>From Percolation to Random-Turn Games and the Infinity Laplacian</i>       |
| 10:30-11:00 | <i>Coffee break</i>   |
| 11:00-12:00 | <b>László Lovász</b> (Eötvös Loránd University)<br><i>Local and Global Convergence in Bounded Degree Graphs</i> |
| 12:00-14:00 | <i>Lunch at Beit Belgia</i>   |

- 14:00-15:00      **Claire Mathieu** (Brown University)  
*Martingales for the Analysis of Algorithms: geometric Partial Set Cover and Greedy Dense Max Cut*
- 15:00-15:30      *Coffee break*
- 15:30-16:30      **Nicolas Curien** (École Normale Supérieure)  
*Scaling Limit of Random Planar Maps and the Brownian Cactus*
- 16:45-17:45      **Omer Angel** (University of British Columbia)  
*Local Limits of Graphs and Recurrence*
- 18:00              *Reception*

### **Wednesday, December 16**

- 9:30-10:30      **Jeffrey Steif** (Chalmers University of Technology)  
*Noise Sensitivity, Spectrum and Dynamical Percolation 1*
- 10:30-11:00      *Coffee break*
- 11:00-12:00      **Christophe Garban** (CNRS/ENS Lyon)  
*Noise Sensitivity, Spectrum and Dynamical Percolation 2*
- 12:00-14:00      *Lunch at Beit Belgia*
- 14:00-15:00      **Balázs Szegedy** (University of Toronto)  
*Limits of Functions on Abelian Groups and Higher Order Fourier Analysis*
- 15:00-15:30      *Coffee break*
- 15:30-16:30      **Balázs Szegedy** (University of Toronto)  
*Interesting Limit Structures in Extremal Graph Theory*
- 16:45-17:45      **Miklós Abért** (Alfred Rényi Institute)  
*Kesten's Theorem for Unimodular Networks and Finite Graphs*

### **Thursday, December 17**

- 9:30-10:30      **Christophe Garban** (CNRS/ENS Lyon)  
*Noise Sensitivity, Spectrum and Dynamical Percolation 3*
- 10:30-11:00      *Coffee break*
- 11:00-12:00      **Jeffrey Steif** (Chalmers University of Technology)  
*Noise Sensitivity, Spectrum and Dynamical Percolation 4*
- 12:00-14:00      *Lunch at Beit Belgia*

- 14:00-15:00      **László Lovász** (Eötvös Loránd University)  
*Local and Global Convergence in Bounded Degree Graphs*
- 15:00-15:30      *Coffee break*
- 16:00-17:00      **Gregory F. Lawler** (University of Chicago)  
*Math Department Colloquium: Fractal and Multifractal Properties of the Schramm-Loewner Evolution*
- 17:15-18:15      **Wendelin Werner** (Université Paris-Sud)  
*Math Department "Basic Notions" Talk: Randomness and Scale-Invariance*

## **Friday, December 18**

- 9:00-10:00      **Elchanan Mossel** (Weizmann Institute)  
*Probability and Geometry of Monotonicity and Manipulability*
- 10:00-10:30      *Coffee break*
- 10:30-11:30      **Ori Gurel-Gurevich** (Microsoft)  
*Recurrence of the Simple Random Walk Path*
- 11:30-12:30      **Yuval Peres** (Microsoft)  
*Aggregation Models with Multiple Sources, and the Mystery of the Abelian Sandpile*
- 12:30-13:30      **Vincent Beffara** (CNRS/ ENS Lyon)  
*The Dimension of SLE Curves*
- 13:30              *Light lunch at the IAS*

## **Saturday, December 19**

### **Day Tour to Masada and the Dead Sea**

## **Sunday, December 20**

- 9:30-10:30      **Gábor Elek** (Alfred Rényi Institute)  
*Borel Oracles. Testing Graphs of Bounded Vertex Degrees*
- 10:30-11:00      *Coffee break*
- 11:00-12:00      **Vladas Sidoravicius** (CWI-Amsterdam and IMPA-Rio de Janeiro)  
*Uniqueness and Non-uniqueness for Markov Chains with Infinite Connections*
- 12:00-14:00      *Lunch at Beit Belgia*

- 14:00-15:00      **David B. Wilson** (Microsoft, Redmond)  
*Finitary Colorings*
- 15:00-15:30      *Coffee break*
- 15:30-16:30      **Vincent Beffara** (CNRS/ ENS Lyon)  
*The Dimension of SLE Curves*
- 16:45-17:45      **Nathanaël Berestycki** (University of Cambridge)  
*Mixing Times and Coalescence-Fragmentation*

## **Monday, December 21**

- 9:30-10:30      **Stanislav Smirnov** (Université de Genève)  
*SLE and Scaling Limits*
- 10:30-11:00      *Coffee break*
- 11:00-12:00      **Gady Kozma** (Weizmann Institute)  
*Mean-Field Percolation*
- 12:00-13:00      **Scott Sheffield** (MIT)
- 13:00-18:00      Half-Day Tour to the Old City of Jerusalem
- 18:30              *Closing dinner at the Terasa restaurant*

## **Tuesday, December 22**

- 9:30-10:30      **Stanislav Smirnov** (Université de Genève)  
*Percolation Scaling Limits and Black Noise*
- 10:30-11:00      *Coffee break*
- 11:00-12:00      **Gábor Elek** (Alfred Rényi Institute)  
*Limits of Trees*
- 12:00-14:00      *Lunch at Beit Belgia*
- 14:00-15:00      **Scott Sheffield** (MIT)
- 15:00-15:30      *Coffee break*
- 15:30-16:30      **Boris Tsirelson** (Tel Aviv University)  
*Black and White: Percolation and Unitary Operators*
- 16:45-17:45      **Gabor Pete** (University of Toronto)  
*The Scaling Limit of Dynamical and Near-Critical Percolation and the Minimal Spanning Tree*

## Wednesday, December 23

- 9:30-10:30      **Eldad Bettelheim** (The Hebrew University)  
*Conformal Restriction in Condensed Matter Physics*
- 10:30-11:00      *Coffee break*
- 11:00-12:00      **Martin Zerner** (Universität Tübingen)  
*Interpolation Percolation*
- 12:00-14:00      *Lunch at Beit Belgia*
- 14:00-15:00      **Gady Kozma** (Weizmann Institute)  
*Mean-Field Percolation*
- 15:00-15:30      *Coffee break*
- 15:30-16:30      **Nathan Keller** (Weizmann Institute)  
*Quantitative Relations between Influences and Noise Sensitivity*
- 16:45-17:45      **Joram Lindenstrauss** (The Hebrew University)