

Weizmann Institute of Science
Faculty of Mathematics and Computer Science

**RECENT ADVANCES IN NONLINEAR
EVOLUTIONARY EQUATIONS AND ANALYSIS OF
MULTI-SCALE PHENOMENA**

July 25-29, 2010
Ziskind Building, Room 1

Program

Sunday, July 25:

- 08:45 – 09:15 **Gathering – Coffee**
- 09:15 – 09:30 Welcoming – **Prof. David Peleg**, Dean, Faculty of Mathematics & Computer Science, The Weizmann Institute of Science
- 09:30 – 10:10 **C. Bardos**, Universite Paris 7, France
"Comparing large time behavior of regularity criteria for the 2d Euler equation"
- 10:15 – 10:55 **K. Ohkitani**, The University of Sheffield, Sheffield, United Kingdom
"Study of the 3D Euler equations by Clebsch potentials"
- Coffee break**
- 11:30 – 12:10 **M. Ben-Artzi**, The Hebrew University, Jerusalem, Israel
"Decay estimates and vanishing viscosity for viscous Hamiltonian-Jacobi equations"
- 12:15 – 12:55 **P. Rosenau**, Tel Aviv University, Ramat Aviv, Israel
"Brother, can you spare a compacton?"
- 13:00 – 14:30 **Lunch break**
- 14:30 – 15:10 **A. Mazzucato**, Penn State University, State College, PA, USA
"The vanishing viscosity limit in channel and pipe flows"
- 15:15 – 15:55 **V. Rom-Kedar**, The Weizmann Institute of Science, Rehovot, Israel
"Parabolic resonance: A route to Hamiltonian spatio-temporal chaos"
- Coffee break**
- 16:30 – 17:10 **V. Lvov**, The Weizmann Institute of Science, Rehovot, Israel
"Energy cascades in quantum turbulence"
- 17:15 – 17:55 *Poster session oral presentations*
- 18:00 – Wine and cheese in the lobby of Ziskind Building

Monday, July 26:

09:00 – 09:30

Gathering – Coffee

09:30 – 10:10

N. Paldor, The Hebrew University, Jerusalem, Israel
"Solutions of shallow water equations with rotation in non Cartesian surfaces"

10:15 – 10:55

S. Schochet, Tel Aviv University, Ramat Aviv, Israel
"Singular limits of symmetric hyperbolic systems with large variable-coefficient terms"

Coffee break

11:30 – 12:10

Z. Artstein, The Weizmann Institute of Science, Rehovot, Israel
"The Young measures limit for multiscaled differential equations"

12:15 – 12:55

M. Slemrod, University of Wisconsin, Madison, WI, USA
"Analysis and computation of a discrete KdV-Burgers type equation and slow diffusion"

13:00 – 14:30

Lunch break

14:30 – 15:10

M. Marcus, Technion, Haifa, Israel
"Boundary and initial value problems with measure data for semilinear elliptic and parabolic equations"

15:15 – 15:55

Y. Pinchover, Technion, Haifa, Israel
"Large time behavior of the heat kernel"

Coffee break

16:30 – 17:10

L. Karp, ORT Braude College, Karmiel, Israel
"On the well-posedness of the vacuum Einstein's equations"

17:15 – 17:55

P. Markowich, The University of Cambridge, Cambridge, U.K.
"On Wigner and Bohmian measures"
MOVED TO WEDNESDAY!

Tuesday, July 27:

Conference trip to Haifa and Akko

Bus departs at 09:00, from San Martin Clubhouse. Estimated time of return 21:00

Please bring walking shoes, hat, sunscreen, water, camera.

Wednesday, July 28:

09:00 – 09:30

Gathering – Coffee

09:30 – 10:10

P. Constantin, The University of Chicago, Chicago, IL, USA
"Analysis of models of complex fluids"

10:15 – 10:55

E. Süli, University of Oxford, Oxford, United Kingdom
"Existence and equilibration of global weak solutions to kinetic models of dilute polymers"

Coffee break

11:30 – 12:10

E. Sharon, The Hebrew University, Jerusalem, Israel
"Shaping of growing thin sheets"

12:15 – 12:55

A. Novick-Cohen, Technion, Haifa, Israel
"Coupling motion by mean curvature and motion by surface diffusion"

13:00 – 14:30

Lunch break

14:30 – 15:10

S. Reich, Technion, Haifa, Israel
"Integral solutions to a class of nonlocal evolution equations"

15:15 – 15:55

I. Procaccia, The Weizmann Institute of Science, Rehovot, Israel
"Statistical physics and scaling concepts in elasto-plasticity of amorphous solids"

Coffee break

16:30 – 17:10

F. Ramos, University of Bonn, Bonn, Germany
"Scaling in turbulent flows: Heuristics and rigorous results"

*17:15 – 17:55

P. Markowich, The University of Cambridge, Cambridge, U.K.
"On Wigner and Bohmian measures"
***MOVED FROM MONDAY!**

Thursday, July 29:

09:00 – 09:30

Gathering – Coffee

09:30 – 10:10

G. Fibich, Tel Aviv University, Ramat Aviv, Israel
"Continuations of NLS solutions beyond the singularity"

10:15 – 10:55

A. Eden, Bogazici University, Istanbul, Turkey
"From a generalized Davey-Stewartson system to the almost cubic nonlinear Schrödinger equations"

Coffee break

11:30 – 12:10

A. Figotin, University of California, Irvine, CA, USA
"Some mathematical problems in a neoclassical theory of electric charges"

12:15 – 12:55

G. Ariel, Bar-Ilan University, Ramat Gan, Israel
"Gaussian beam decomposition of high frequency wave fields"

13:00 – 14:30

Lunch break

14:30 – 15:10

A. Nepomnyashchy, Technion, Haifa, Israel
"Front propagation in anomalous diffusion-reaction systems"

15:15 – 15:55

G. Wolansky, Technion, Haifa, Israel
"Optimal mass transportation- A dynamic approach"

Coffee break

16:30 – 17:10

E. Tadmor, University of Maryland, College Park, MD, USA
"Linear equations in critical regularity spaces: Hierarchical construction of their nonlinear solutions"