



Advanced Workshop on Nonlinear Photonics, Disorder and Wave Turbulence

Cosponsor(s): In collaboration with: Aston Institute of Photonic Technologies, European Laboratory for Non-Linear Spectroscopy, Novosibirsk State University, Institute of Automation and Electrometry of Russian Academy of Science.
Organizer(s): V. Zakharov (USA), Y. Kivshar (Australia), D. Wiersma (Italy), S. Turitsyn (UK). ICTP Local Organizer:
J. Niemela
Trieste - Italy, 15 - 19 July 2013

Venue: Leonardo da Vinci Building Euler Lecture Hall

Final programme

Monday, 15 July (Room:Leonardo da Vinci Building Euler Lecture Hall)

15 July 2013

- 08:15 - 09:15** (Room: Leonardo da Vinci Building, Lobby)
Registration
- 09:15 - 09:30** **Welcome and opening remarks**
- 09:30 - 10:30** **M. BERRY** / *University of Bristol, UK*
Statistics of singularities in linear random waves
- 10:30 - 11:00** (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---
- 11:00 - 12:00** **M. SEGEV** / *Israel Institute of Technology, Israel*
Anderson Localization of Light and Disorder-Enhanced Transport
- 12:00 - 14:00** --- Lunch ---
- 14:00 - 15:00** **H. CAO** / *Yale University, USA*
Random lasers - past, present, future

- 15:00 - 15:30 (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---
- 15:30 - 16:30 **G. FALKOVICH** / *Weizmann Institute of Science, Israel*
Turbulence and condensate
- 19:00 - 21:00 (Room: Adriatico Guest House (Terrace))
--- Welcome reception ---

Tuesday, 16 July (Room:Leonardo da Vinci Building Euler Lecture Hall)

16 July 2013

- 09:00 - 10:00 **D. WIERSMA** / *LENS - Universita' di Firenze, Florence, Italy*
Disordered Photonics
CANCELLED
- 10:00 - 10:30 **N. BERLOFF** / *University of Cambridge, UK*
Seeing quantum mechanics by the naked eye: Pattern formation in exciton-polariton condensates
- 10:30 - 11:00 (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---
- 11:00 - 11:30 **C. CONTI** / *University Sapienza, Roma, Italy*
About the effect of nonlinearity on disorder induced localization in Hamiltonian and dissipative systems
- 11:30 - 12:00 **S. SKIPETROV** / *University of Grenoble, France*
Emission and capture of light in random media: Euclidean random matrix theory
- 12:00 - 14:00 --- Lunch ---
- 14:00 - 14:45 **S. FISHMAN** / *Israel Institute of Technology, Israel*
Spreading in potentials random in space and time
- 14:45 - 15:15 **B. RUMPF** / *Southern Methodist University, Dallas, USA*
From dawn to decadence: Creation and decay of coherent pulses in one dimensional wave turbulence
- 15:15 - 15:30 (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---
- 15:30 - 16:15 **A. NEWELL** / *University of Arizona, Tucson, USA*
And now for something completely different ... Fibonacci and Optics?

Wednesday, 17 July (Room:Leonardo da Vinci Building Euler Lecture Hall)

17 July 2013

- 09:00 - 09:45 **E. KUZNETSOV** / *Landau Institute for Theoretical Physics, Russia*
How to use wave collapse to get short pulses in fibers
- 09:45 - 10:30 **I. GABITOV** / *University of Arizona, Dallas, USA*
Nonlinear effects in transient metamaterials

- 10:30 - 11:00** (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---
- 11:00 - 11:30** **S. GREDESKUL** / *Ben-Gurion University of the Negev, Israel*
Anderson Localization in Multilayered Metamaterials
- 11:30 - 12:00** **V. FREILIKHER** / *Bar-Ilan University, Ramat-Gan, Israel*
Charge transport in graphene superlattices and light propagation in dielectric structures: a comparative study
- 12:00 - 14:00** --- Lunch ---
- 14:00 - 14:45** **S. A. MUJUMDAR** / *Tata Institute of Fundamental Research, Mumbai, India*
Frequency and intensity fluctuations in random lasers
- 14:45 - 15:00** (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---
- 15:00 - 15:45** **V. ZAKHAROV** / *University of Arizona, Tucson, USA*
Nonlinear stage of modulational instability
CANCELLED
- 19:00 - 21:00** --- Workshop dinner ---
Those who wish to go to the workshop dinner should sign up with the secretary (room 138) by 12 noon on Tuesday, 16 July.

Thursday, 18 July (Room: Leonardo da Vinci Building Euler Lecture Hall)

18 July 2013

- 09:00 - 09:45** **S. GALTIER** / *Université Paris-Sud, Institut d'Astrophysique Spatiale, Paris, France*
Wave turbulence in astrophysics and geophysics
- 09:45 - 10:30** **N. VLADIMIROVA** / *University of New Mexico, USA*
Review of optical turbulence in focusing and defocusing media
- 10:30 - 11:00** (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---
- 11:00 - 11:30** **D. CHURKIN** / *Aston University, Birmingham, UK*
Laminar-turbulent transition in fibre laser
- 11:30 - 12:00** **A. PICOZZI** / *University de Bourgogne, Dijon, France*
Optical wave turbulence
- 12:00 - 14:00** --- Lunch ---
- 14:00 - 14:30** **E. PODIVILOV** / *Institute of Automation and Electrometry SB RAS, Novosibirsk, Russia*
Description of fiber laser spectra by wave kinetic theory
- 14:30 - 15:00** **P. SURET** / *Université Lille, France*
Wave Turbulence and non gaussian statistics in 1D Nonlinear Schrodinger Equation
- 15:00 - 15:15** (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---

15:15 - 16:00 **P. SEBBAH** / *Institut Langevin, Paris, France*
Taming random lasers: Turning a random laser into a tunable singlemode laser by active pump shaping

Friday, 19 July (Room:Leonardo da Vinci Building Euler Lecture Hall)

19 July 2013

09:00 - 09:30 **S. NAZARENKO** / *Warwick University, UK*
Wave turbulence, Bose-Einstein condensation and Berezinski-Kousterlitz-Thouless transition in 2D NLS system

09:30 - 10:00 **P. LUSHNIKOV** / *University of New Mexico, USA*
Logarithmic scaling of critical collapse and strong collapse turbulence

10:00 - 10:30 **I. KOLOKOLOV** / *Landau Institute for Theoretical Physics, Russia*
Two-dimensional turbulence in a finite box: fluctuations and coherent structures

10:30 - 11:00 (Room: Leonardo da Vinci Building Terrace)
--- Coffee break ---

11:00 - 11:30 **D. SHEPELYANSKY** / *The Institute of Research on Complex Atomic and Molecular Systems, Toulouse, France*
Kolmogorov turbulence facing Anderson localization and KAM integrability

11:30 - 12:00 **V. LEBEDEV** / *Landau Institute for Theoretical Physics, Russia*
Passive Scalar Transport in Peripheral Regions of Random Flows

12:00 - 12:15 **Closing remarks**

12:15 - 14:00 --- Lunch ---