

Ettore Majorana Foundation and Centre for Scientific Culture

XII Course of the School on Complexity

"Complex Phenomena in Nonlinear Physics"

Erice, 3-7 October 2009

PROGRAM

Sunday October 4

SHOCK AND ROGUE WAVES

9:00-9:45 (INVITED)

Nail Akhmediev

Waves that Appear from Nowhere - Analytic Results

9:45-10:30 (INVITED)

Majid Taki

Rogue Waves: Modeling and Experiments

10:30-11:00 Coffee Break

11:00-11:45 (INVITED)

Pierre-Ambroise Lacourt

Optical Rogue Waves

11:45-12:15

Neil Broderick

Shock Wave Formation in Optical Micro-coil Cavities

12:15-12:45

Mark Hoefer

Theory of Two-Dimensional Oblique Dispersive Shock Waves

12:45-13:15

Vivi Rottshafer

Singular solutions of the generalised Korteweg-de Vries equation

13:15-15:00 Lunch Break

15:00-15:45 (INVITED INTERDISCIPLINARY)

Luca Leuzzi

Spin Glass Theory and a Definition of Complexity

LASERS AND DISSIPATIVE SYSTEMS

15:45-16:30 (INVITED)

Nathan J. Kutz

The Dominant Role of Intra-cavity Dynamics for High-power Ultra-short Lasers

16:30-17:00 Coffee Break

17:00-17:45 (INVITED)

Omri Gat

Mode-locked laser pulse fluctuations in the statistical steady state

17:45-18:30 (INVITED)

Philippe Grelu

Collective Dynamics of Dissipative Solitons in Mode-locked Lasers

18:30-19:00

Stephane Barland

Localized vortices in semiconductor lasers

POSTER SESSION

Monday October 5

WAVE-TURBULENCE AND COMPLEXITY

9:00-9:45 (INVITED)

George Stegeman

Complexity in Discrete Surface Soliton Generation

9:45-10:30 (INVITED)

Jason W. Fleisher

Turbulent Light and its Application to Imaging

10:30-11:00 Coffee Break

11:00-11:30

Alexandre Goy

Imaging through focusing Kerr media

11:30-11:45

Shu Jia (Ph.D. Student)

Rayleigh-Taylor instability in nonlinear Schrodinger flow

11:45-12:30 (INVITED)

Antonio Picozzi

Wave Turbulence and Thermalization of Random Nonlinear Waves

12-30:13:15 (INVITED)

Eugenio Del Re

Complexity-Driven Optical Spatial Solitons in Relaxor Ferroelectrics

13:15-15:00 Lunch Break

15:00-15:15 (INVITED INTERDISCIPLINARY)

Bruno Crosignani

Adiabatic Pistons and Negentropy

DISORDERED AND NANO-STRUCTURES

15:15-16:00 (INVITED)

Fabio Biancalana

New Nonlinear Effects in Photonic Nanowires

16:00-16:30

Gaetano Assanto

Second Harmonic Generation in Random Quasi-Phase Matched Lithium Tantalate

16:30-17:00 Coffee Break

17:00-17:30

Claudio Conti

The Enlightened Game of Life

Ph.D. Students

17:30 Edwin Ding - Verification of the Haus Master Mode-locking Model

17:45 Falk Eilenberg - Soliton Mediated Optical Quantization of Fibre-Bragg-Gratings

18:00 Marco Leonetti - Light amplification in three-dimensional photonic crystals

18:15 Matt Williams - Spatial Mode-Locking of Light Bullets in Waveguide Arrays

POSTER SESSION

Thursday October 6

POLARITONS

9:00-9:45 (INVITED)

Falk Lederer

Cavity Polariton Solitons

9:45-10:30 (INVITED)

Kikuo Cho

Exciton/polaritons Interacting with Surface Acoustic Waves

10:30-11:00 Coffee Break

11:00-11:30

Andrea D'Andrea

Synergic effects and polariton propagation restoring in super-structures

11:30-12:15 (INVITED)

Ivan Shelyk

Nonlinear Phenomena in Semiconductor Microcavities

12:15-12:45 (INVITED)

Emilia Giorgetti

Thermoionic emission and electron extraction in the photofragmentation of gold nanoparticles

12:45-13:15

Laura Piloizzi

Optical nonlinearities in polariton-polariton scattering: beyond the bosonization schemes

13:15-15:00 Lunch Break

SHORT PULSES AND SUPERCONTINUUM

15:00-15:45 (INVITED)

Fedor Mitschke

Supercontinuum Generation in a Fiber Resonator

15:45-16:15

Alexander Nazarkin

Subnanosecond Solitary Pulses by Backward Raman Scattering in Hydrogen-filled PhC Fibres

16:15-16:30

Aleksandr Zavyalov (Ph.D. student)

Robust Multi-Soliton Complexes in Fiber Lasers

16:30-17:00 Coffee Break

17:00-17:30

Alexei Sysoliatin

Subpicosecond optical pulse processing via fiber dispersion management

17:30-18:00

Daniele Faccio

Energy-density characterization of complex ultrashort laser pulses

18:00-18:30

Ksenia Shandarova

Experimental Observation of Rabi Oscillations in Photonic Lattices

18:30-19:00

Stefano Wabnitz

Dissipative and conservative attractors for short pulses in optical fiber systems

POSTER SESSION

SYNOPSIS

Complex Phenomena in Nonlinear Physics (Erice, 3-7 Ottobre 2009)

	Sat October 3	Sun October 4	Mon October 5	Thu October 6	Wed October 7
7:00/8:00	CHECK IN	BREAKFAST			CHECK OUT
8:00/9:00		POSTER SESSION			
9:00		Akhmediev	Stegeman	Lederer	
9:15		Akhmediev	Stegeman	Lederer	
9:30		Akhmediev	Stegeman	Lederer	
9:45		Taki	Fleisher	Cho	
10:00		Taki	Fleisher	Cho	
10:15		Taki	Fleisher	Cho	
10:30-11:00		Coffee	Coffee	Coffee	
11:00		Lacourt	Goy	D'Andrea	
11:15		Lacourt	Goy	D'Andrea	
11:30		Lacourt	Shu Jia	Shelykh	
11:45		Broderick	Picozzi	Shelykh	
12:00		Broderick	Picozzi	Shelykh	
12:15		Rottschaefer	Picozzi	Giorgetti	
12:30		Rottschaefer	Del Re	Giorgetti	
12:45		Hoefler	Del Re	Pilozzi	
13:00		Hoefler	Del Re	Pilozzi	
13:15-15:00		Lunch	Lunch	Lunch	
15:00		Leuzzi	Crosignani	Mitschke	
15:15	Leuzzi	Biancalana	Mitschke		
15:30	Leuzzi	Biancalana	Mitschke		
15:45	Kutz	Biancalana	Nazarkin		
16:00	Kutz	Assanto	Nazarkin		
16:15	Kutz	Assanto	Zavalov		
16:30-17:00	Coffee	Coffee	Coffee		
17:00	Gat	Conti	Sysoliatin		
17:15	Gat	Conti	Sysoliatin		
17:30	Gat	Ding	Faccio		
17:45	Grelu	Eilenberger	Faccio		
18:00	Grelu	Leonetti	Shandarova		
18:15	Grelu	Williams	Shandarova		
18:30	Barland	POSTERS	Wabnitz		
18:45	Barland		Wabnitz		
19:00	POSTERS		POSTERS		

Topics
ROGUES
LASERS

Topics
COMPLEXITY
RANDOM/NANO
Ph.D.Students

Topics
POLARITONS
SHORT PULSES