



Workshop on Nonlinear Waves USQ Toowoomba | 26 – 30 November 2018

Program

Day 0, Sunday, 25 November

18:00 – 21:00, Welcome reception, USQ Refectory (please see Block R in the USQ map)

Day 1, Monday, 26 November

9:00 – 9:30, Workshop opening and general information (P. Terry, Y. Stepanyants)

Session 1, Chairperson: Anthony Roberts

- (1) 9:30 – 10:30, Edward Johnson, Finite-amplitude compact wavepackets in rotating flows (plenary talk)
- (2) 10:30 – 11:00, Simon Clarke, “The forced coupled KdV equations as a model for internal waves in the atmosphere”

Morning coffee break: 11:00 – 11:30

Session 2, Chairperson: Lev Ostrovsky

- (3) 11:30 – 12:30, Efim Pelinovsky, Long traveling waves in a two-layer fluid with a variable depth (plenary talk)
- (4) 12:30 – 13:00, Sergey Dobrokhotov, “Simple exact solutions of one-dimensional linear and nonlinear shallow water equations over sloping bottom”

Lunch break: 13:00 – 14:00

Session 3, Chairperson: Victor Shrira

- (5) 14:00 – 14:30, Georg Gottwald, “On the impossibility of solitary Rossby waves in meridionally unbounded domains”
- (6) 14:30 – 15:00, Tatyana Talipova, “Breathers in the stratified fluid: generation, dynamics and stability”

Afternoon tea break: 15:00 – 15:30

Session 4, Chairperson: Simon Clarke

- (7) 15:30 – 16:00, Hubert Chanson, “Non-linearity in tsunami and tidal bore roller”
- (8) 16:00 – 16:30, Amin Chabchoub, “Water wave packet shoaling and dispersive shock waves”

18:00 – 19:00, Popular public lecture. Professor Boris Malomed (Tel-Aviv University, Israel): “Fundamental nonlinear equations and their solutions. Application to physical and engineering sciences”. Rm R113.

Day 2, Tuesday, 27 November

Session 5, Chairperson: Georg Gottwald

- (9) 9:00 – 10:00, Lev Ostrovsky, “Nonlinear internal waves in a rotating ocean” (plenary talk)
- (10) 10:00 – 10:30, Karl Helfrich, “Optimal shear instabilities of large-amplitude internal solitary waves”
- (11) 10:30 – 11:00, Anna Karczewska, “Martingale solution to stochastic Korteweg–de Vries equation”

Morning coffee break: 11:00 – 11:30

Session 6, Chairperson: Efim Pelinovsky

- (12) 11:30 – 12:30, Karima Khusnutdinova, “On the Ostrovsky equation and related topics” (plenary talk)
- (13) 12:30 – 13:00, Piotr Rozmej, “Exact soliton, periodic and superposition solutions to the fifth-order Korteweg–de Vries equation and derivation of a new equation for an uneven bottom”

Lunch break: 13:00 – 14:00

Session 7, Chairperson: Karl Helfrich

- (14) 14:00 – 15:00, Victor Shrira, “Blow-up of vorticity waves in homogeneous and weakly stratified boundary layers” (plenary talk)
- (15) 15:00 – 15:30, Didier Clamond, “Computation of steady waves in shallow (and deep) water”

Afternoon tea break: 15:30 – 16:00

Session 8, Chairperson: Amin Chabchoub

- (16) 16:00 – 16:30, Montri Maleewong “Generalised solitary gravity-capillary waves in the forced Korteweg–de Vries model”
- (17) 16:30 – 17:00, Andrei Ermakov, “Interaction of Korteweg–de Vries solitons with external sources”

18:00 – 19:00, Popular public lecture. Professor Anthony Roberts (University of Adelaide, Australia): “Mathematical modelling of ranking schemes in sport, and elsewhere”. Rm R113.

17:15 – 18:00, Vasily Belashov – poetry evening (in Russian), Rm D206.

Day 3, Wednesday, 28 November

Session 9, Chairperson: Timothy Marchant

- (18) 9:00 – 10:00, Boris Malomed, “Multidimensional solitons in optics and ultracold gases: Predictions and creation” (plenary talk)
- (19) 10:00 – 10:30, Zhiming Lu, “Interaction of multi-lumps within the KP1 equation: analytical and numerical results”
- (20) 10:30 – 11:00, Vasily Belashov, “Multidimensional solitons in dispersive complex media: structure and stability. Applications”

Morning coffee break: 11:00 – 11:30

Session 10, Chairperson: Piotr Rozmej

(21) 11:30 – 12:30, Jerry Bona, Model Equations for Surface Wave Propagation (**plenary talk**)

(22) 12:30 – 13:00, Vladimir Zeitlin, “Linear and nonlinear equatorial atmospheric waves coupled to moist convection”

Lunch break: 13:00 – 14:00

Session 11, Chairperson: Boris Malomed

(23) 14:00 – 15:00, Anthony Roberts, “Macroscale simulation of nonlinear waves via computation only on small staggered patches” (**plenary talk**)

(24) 15:00 – 15:30, Stuart Anderson “Radar detection and characterization of nonlinear waves in the ocean”

(25) 15:30 – 16:00, Nawin Raj, “Interactions of vector solitons in the model of a particle chain”

17:15 – 18:00, Lev Ostrovsky – poetry evening (in Russian), Rm D206.

Day 4, Thursday, 29 November

Session 13, Chairperson: Karima Khusnutdinova

(1) 9:00 – 10:00, Roger Grimshaw, “Solitary wave trains and undular bores” (**plenary talk**)

(2) 10:00 – 10:30, Scott McCue, “Linear and nonlinear surface wave patterns for flow past a submerged source or doublet”

(3) 10:30 – 11:00, Ravindra Pethiyagoda, “Time-frequency analysis of nonlinear ship waves”

Morning coffee break: 11:00 – 11:30

Session 14, Chairperson: Vladimir Zeitlin

(4) 11:30 – 12:30, Alexander Babanin “Wave breaking – nonlinear wave phenomenon” (**plenary talk**)

(5) 12:30 – 13:00, Alex Skvortsov, “Scattering of surface waves by a periodic system of spikes at the bottom”

Lunch break: 13:00 – 14:00

Session 15, Chairperson: Edward Johnson

(6) 14:00 – 15:00, Timothy Marchant, “Dispersive shock waves governed by the Whitham equation and their stability”

15:00 – 15:30, Workshop closing.

Conference dinner, 18:30 – 21:30 (R block Refectory)

Day 5, Friday, 30 November, 8:00 – 20:00, Bus excursion to Brisbane

Workshop Organisers are thankful to the Sponsors for the financial support:

