



PMNP 2017
PHYSICS AND MATHEMATICS OF
NONLINEAR PHENOMENA. 50 YEARS OF I.S.T.
<http://pmnp.unisalento.it/>
17–24 June 2017

Conference Program

Last updated: June 14, 2017

Saturday 17 June: Arrival day and registration, Ecoresort Le Sirene.

Sunday 18 morning session

08.00 – 08.45 *Registration*

08.45 – 09.00 *Opening*

CHAIRPERSON: CALOGERO

09.00 – 09.45 Zakharov *Unresolved problems in the theory of integrable systems*

09.45 – 10.30 Magri *On the Hirota's tau function*

10.30 – 10.50 *Coffee Break*

10.50 – 11.35 Krichever *Spectral theory of periodic 2D Shrodinger operators integrable on a "singular" energy level*

11.35 – 12.20 Ruijsenaars *Sine-Gordon field theory vs. relativistic Calogero-Moser N-particle sytems: An overview*

Sunday 18 afternoon session

CHAIRPERSON: RUIJSENAARS

15.00 – 15.30 Estevez *Lump solitons in a higher-order nonlinear equation in 2+1 dimensions*

15.30 – 16.00 Rogers *Ermakov-Painlevé II Reduction in Cold Plasma Physics. Application of a Bäcklund Transformation*

16.00 – 16.30 Mueller-Hoissen *Vector KP equation: Tropical limit and Yang-Baxter relation*

16.30 – 17.00 Ferapontov *Integrable systems in 4D associated with sixfolds in $Gr(4, 6)$*

17.00 – 17.20 *Coffee Break*

CHAIRPERSON: SANTINI

17.20 – 17.50 Wang *Higher rank solutions for the periodic two dimensional Volterra system*

17.50 – 18.20 Krasil'shchik *Nonlocal symmetries of integrable linearly degenerate equations: a comparative study*

18.20 – 18.40 Carillo *Abelian and non-Abelian Bäcklund Charts*

18.40 – 19.00 Gandarias *Conservation laws, symmetries, and exact solutions of generalized KP and Boussinesq equations in two dimensions*

Monday 19 morning session

CHAIRPERSON: KODAMA

09.00 – 09.45	Ablowitz	<i>Solitons and Integrable Nonlocal Nonlinear Equations</i>
09.45 – 10.30	Mikhailov	<i>The space of symmetric squares of hyperelliptic curves: infinite-dimensional Lie algebras and polynomial integrable dynamical systems on \mathbb{C}^4</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.35	Takasaki	<i>Melting crystal model and its 4D limit</i>
11.35 – 12.05	Winternitz	<i>Superintegrable systems in quantum mechanics and the Painlevé transcendents</i>
12.05 – 12.25	Raskovalov	<i>Solitons and spin waves in the spiral structure of magnets</i>

Monday 19 afternoon session

CHAIRPERSON: ABLOWITZ

15.00 – 15.30	Nucci	<i>Superintegrability and linearity</i>
15.30 – 16.00	Snobl	<i>Superintegrable 3D systems in a magnetic field corresponding to Cartesian separation of variables</i>
16.00 – 16.30	Marciniak	<i>Maximally superintegrable classical and quantum Stäckel systems</i>
16.30 – 17.00	Gerdjikov	<i>Symmetric spaces and new 2-component integrable NLS equations</i>
17.00 – 17.20	<i>Coffee Break</i>	
		CHAIRPERSON: VESELOV
17.20 – 17.50	Grahovski	<i>Integrable nonlocal multi-component equations with PT and CPT symmetries</i>
17.50 – 18.10	Xu	<i>Solitons and their interactions in the PT-symmetric nonlocal nonlinear Schrodinger models</i>
18.30	Excursion	

Tuesday 20 morning session		in memory of L.D. FADDEEV
CHAIRPERSON: MATVEEV		
09.00 – 09.45	Matveev	<i>LD Faddeev, long range scattering and some unsolved problems in the IST method</i>
09.45 – 10.30	Takhtajan	<i>L.D. Faddeev works on the inverse scattering problem</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.35	Semenov-Tian-Shansky	<i>Hamiltonian aspects of the Classical Inverse Scattering Method in the work of L.D.Faddeev and his laboratory</i>
11.35 – 12.20	Sklyanin	<i>L.D. Faddeev's work on quantum integrability</i>

Tuesday 20 afternoon session		
CHAIRPERSON: MIKHAILOV		
15.00 – 15.30	Chalykh	<i>Dunkl-Cherednik operators and quantum Lax Pairs</i>
15.30 – 16.00	Habibullin	<i>On a direct algorithm for constructing recursion operators and Lax pairs for integrable models</i>
16.00 – 16.30	Schiff	<i>Some Unfamiliar Aspects of Bäcklund Transformations</i>
16.30 – 17.00	Tondo	<i>Haantjies manifolds of the classical Lagrange top</i>
17.00 – 17.20	<i>Coffee Break</i>	
CHAIRPERSON: ESTEVEZ		
17.20 – 17.50	Milson	<i>Pseudo-Wronskians of Hermite polynomials</i>
17.50 – 18.20	Novikov	<i>Towards global classification of integrable 2 + 1-dimensional equations</i>
18.20 – 18.40	Casati	<i>Normal forms of dispersive scalar Poisson brackets for two-dimensional systems</i>
21.00–23.00	Poster session ¹	

Wednesday 21 morning session		
CHAIRPERSON: MAGRI		
9.00 – 9.45	Calogero	<i>Zeros of polynomials, solvable dynamical systems and generations of polynomials</i>
9.45 – 10.30	Nijhoff	<i>Quantum variational principle and quantum multiform</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.35	Santini	<i>Analytic description of the exact rogue wave recurrence in the periodic NLS Cauchy problem</i>
11.35 – 12.20	Zabrodin	<i>Matsuo-Cherednik type correspondence and quantum-classical duality of integrable systems</i>
12.20– 12.40	Fachechi	<i>Integrability in AGT duality</i>

¹ Posters will be on display until the end of the conference.

Wednesday 21

14.15	<i>Excursion</i>	
21.00	Music show	"Arakne Mediterranea"

Thursday 22 morning session

CHAIRPERSON: KRICHEVER		
09.00 – 09.45	Kodama	<i>Regular triangulations of point sets and solitons in two dimensions II</i>
09.45 – 10.30	Bobenko	<i>On a discretization of confocal quadrics: Geometric parametrizations, integrable systems and incircular nets</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.35	Schief	<i>Integrable discretisation of hodograph-type systems, hyperelliptic integrals and Whitham equations</i>
11.35 – 12.05	Ragnisco	<i>New findings on Perlick system I: from the algebra of symmetries to the geometry of the orbits</i>
12.05 – 12.25	Vermeeren	<i>Continuum limits of pluri-Lagrangian systems</i>

Thursday 22 afternoon session

CHAIRPERSON: NIJHOFF		
15.00 – 15.30	Conte	<i>Painlevé VI surfaces</i>
15.30 – 16.00	Pogrebkov	<i>Continuous symmetries of the Hirota difference equations</i>
16.00 – 16.30	Pavlov	<i>New Three-Dimensional Integrable Discrete Systems and Their Dispersionless Limits</i>
16.30 – 16.50	Dzhamay	<i>Geometric Deautonomization and Discrete Painlevé Equations</i>
16.50 – 17.10	Lin	<i>Soliton hierarchy with self-consistent sources: inverse scattering method and Darboux transformation</i>
17.10 – 17.30	<i>Coffee Break</i>	
CHAIRPERSON: BOBENKO		
17.30 – 18.00	Kudryashov	<i>Higher-order partial differential equations for description of the Fermi-Pasta-Ulam and the Kontorova-Frenkel models</i>
18.00 – 18.30	Moro	<i>Dressing networks: towards an integrability approach to collective and complex phenomena</i>
18.30 – 18.50	Ponno	<i>Hydrodynamics of the FPU problem and its integrable aspects</i>
18.50 – 19.10	Chesnokov	<i>Stability of shear shallow water flows with free surface</i>

Thursday 22 June

20.30	Social Dinner	
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Friday 23 morning session

		CHAIRPERSON: TAKASAKI
09.00 – 09.45	Viallet	<i>On the invariants of integrable maps</i>
09.45 – 10.15	Nakayashiki	<i>Solutions of the KP-hierarchy corresponding to degenerate trigonal curves</i>
10.15 – 10.35	Grandati	<i>Exceptional Hermite polynomials and rational solutions of the Painlevé IV chain</i>
10.35 – 10.55	<i>Coffee Break</i>	
10.55 – 11.25	Abenda	<i>KP theory, total positivity and rational degenerations of M-curves</i>
11.25 – 11.55	Skrypnik	<i>Separation of variables in anisotropic models and non-skew-symmetric elliptic r-matrix</i>
11.55 – 12.15	Hamanaka	<i>Noncommutative Solitons</i>

Friday 23 afternoon session

		CHAIRPERSON: ROGERS
15.00 – 15.30	Boscolo	<i>Spectral compression by self-phase modulation in optical fibres</i>
15.30 – 15.50	Gaillard	<i>Multiparametric families of solutions to the KPI equation, their Fredholm, wronskians and degenerate determinant representations and multi-rogue waves</i>
15.50 – 16.10	Khe	<i>Fluid flow in a plane channel with deformable walls</i>
16.10 – 16.30	Myrzakulov	<i>Two Interacting Surfaces and Curves Corresponding to Periodic Solutions of Manakov System</i>
16.30 – 16.50	Bernatska	<i>Solving the Jacobi inversion problem by means of degenerate multivariate sigma-functions</i>
16.50 – 17.10	<i>Coffee Break</i>	
		CHAIRPERSON: ZAKHAROV
17.10 – 17.40	Rosenhaus	<i>Sub-symmetries and their applications</i>
17.40 – 18.00	Leble	<i>Integrable potentials by Darboux Transformations in rings and quantum/classical problems</i>
18.00 – 18.45	Veselov	<i>Solitons, Huygens' principle and von Karman vortex streets</i>
18.45 – 19.00	<i>Closing</i>	

Saturday 24 June: Departure day