

PMNP 2015

PHYSICS AND MATHEMATICS OF
NONLINEAR PHENOMENA

<http://pmnp2015.dmf.unisalento.it/>

20–27 June 2015



UNIVERSITÀ
DEL SALENTO



MONTE
DEI PASCHI
DI SIENA
BANCA DAL 1472



Conference Program

Last updated: June 18, 2015

Saturday 20 June: Arrival day and registration, Ecoresort Le Sirene.

Sunday 21

08.15 – 09.00 *Registration*

09.00 – 09.15 *Opening.*
Congratulations to Prof. F. Calogero on his 80th anniversary.

Sunday 21 morning session

09.15 – 10.00	Calogero	CHAIRPERSON: KONOPELCHENKO <i>Finite-dimensional representations of shift operators, remarkable matrices and matrix functional equations</i>
10.00 – 10.45	Magri	<i>Haantjes manifolds and Veselov systems</i>
10.45 – 11.05	<i>Coffee Break</i>	
11.05 – 11.50	Kodama	<i>Regular triangulation of point sets and solitons in two dimensions</i>
11.50 – 12.35	Nijhoff	<i>Lagrangian Multiform Theory: recent advances and future perspectives</i>

Sunday 21 afternoon session

		CHAIRPERSON: SANTINI
15.30 – 16.00	Abenda	<i>Rational degenerations of m-curves and totally positive Grassmannians</i>
16.00 – 16.30	Ferapontov	<i>On the integrability in Grassmann geometries: integrable systems associated with fourfolds in $Gr(3, 5)$</i>
16.30 – 17.00	Tondo	<i>The Haantjes Manifolds of Integrable and Separable Systems</i>
17.00 – 17.20	<i>Coffee Break</i>	
17.20 – 17.50	Novikov	<i>On the classification of discrete Hirota-type equations in 3D</i>
17.50 – 18.20	Kwiatkowski	<i>Domain shape dependence of semiclassical corrections to energy</i>

Monday 22 morning session

		CHAIRPERSON: MAGRI
09.00 – 09.45	Kac	<i>The method of lambda-brackets in the theory of integrable Hamiltonian PDE</i>
09.45 – 10.30	Dubrovin	<i>TBA</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.20	Carlet	<i>Bihamiltonian cohomology and deformations of Poisson pencils of hydrodynamic type</i>
11.20 – 11.50	Savoldi	<i>Hamiltonian operators of Dubrovin-Novikov type in 2D</i>
11.50 – 12.20	Casati	<i>Poisson cohomology of scalar multidimensional Dubrovin-Novikov brackets</i>

Monday 22 afternoon session

		CHAIRPERSON: VESELOV
15.30 – 16.00	Santini	<i>Recent results on integrable dispersionless PDEs in multidimensions</i>
16.00 – 16.30	Zarmi	<i>Structure of asymptotic soliton webs in solutions of Kadomtsev-Petviashvili II equation</i>
16.30 – 17.00	Khusnutdinova	<i>On 2+1 - dimensional cKdV-type equation for internal ring waves on a shear flow</i>
17.00 – 17.15	<i>Coffee Break</i>	
17.15 – 17.45	Gerdjikov	<i>Complete integrability of Nonlocal Nonlinear Schrödinger equation</i>
17.45 – 18.15	Burde	<i>Transformations from traveling wave solutions to non-traveling wave solutions of evolution equations</i>

Monday 22 18.30 – 20.00 Excursion

Tuesday 23 morning session

		CHAIRPERSON: KAC
09.00 – 09.45	Wiegmann	<i>Selberg integrals on Riemann surfaces</i>
09.45 – 10.30	Chekhov	<i>Hurwitz numbers, Belyi pairs, Grothendieck dessins d'enfant, and matrix models</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.20	Chvartatskyi	<i>Binary Darboux Transformations in Bidifferential Calculus</i>
11.20 – 11.50	Grahovski	<i>On Integrable Discretisations for Grassmann-Extended NLS Equations: Darboux Transformations and Yang-Baxter Maps</i>
11.50 – 12.20	Levi	<i>Discretizing the Liouville equation</i>
12.20 – 12.50	Gubbiotti	<i>On quad equations consistent on the cube</i>

Tuesday 23 afternoon session **In memory of Prof. G. Soliani**

		CHAIRPERSON: L. MARTINA
15.30 – 16.00	P. Winternitz	<i>Classical and Quantum Superintegrable Systems with Nth Order Integrals of Motion</i>
16.00 – 16.30	Nucci	<i>Ubiquitous symmetries</i>
16.30 – 17.00	Vitale	<i>Dark-bright soliton solutions with nontrivial polarization interactions for the three-component defocusing nonlinear Schrödinger equation</i>
17.00 – 17.20	<i>Coffee Break</i>	
17.20 – 17.50	Boscolo	<i>Parabolic similaritons in optical fibres</i>
17.50 – 18.20	Grundland	<i>Soliton surfaces in the generalized symmetries approach</i>
18.20 – 18.50	Snobl	<i>3D superintegrable systems with magnetic field</i>

Tuesday 2321.00–23.00 *Poster session*¹

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

Wednesday 24 morning session

		CHAIRPERSON: WINTERNITZ
9.00 – 9.45	Kuznetsov	<i>Fermi-Pasta-Ulam recurrence and modulation instability</i>
9.45 – 10.30	Veselov	<i>Vortex streets and solitons</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.35	Mikhailov	<i>Differential-difference and finite-difference integrable systems associated with Kac-Moody algebras</i>
11.35 – 12.05	Moll	<i>Random partitions and the quantum Benjamin-Ono hierarchy</i>
12.05 – 12.35	Zubarev	<i>Formation of curvature singularities on a fluid interface during the Kelvin-Helmholtz instability</i>

Wednesday 24 14.30 – 19.00 Excursion21.00 Music Show

Thursday 25 morning session

		CHAIRPERSON: KODAMA
09.00 – 09.45	Kuniba	<i>Tetrahedron equation and generalized quantum groups</i>
09.45 – 10.30	Zabrodin	<i>Dispersionless DKP hierarchy and elliptic Loewner equation</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.20	Pogrebkov	<i>Commutator identities on an associative algebra and non-Abelian integrable equations</i>
11.20 – 11.50	Bogdanov	<i>Some tropical analogues of integrable equations in (2+1) dimensions</i>
11.50 – 12.20	Dunajski	<i>Quartics, sextics, and beyond</i>
12.20 – 12.50	Kruglikov	<i>Self-Duality and Symmetric Deformations of Integrable PDE</i>

Thursday 25 afternoon session

		CHAIRPERSON: NIJHOFF
15.30 – 16.00	Krasil'shchik	<i>Symmetry reductions of Lax integrable 3D systems</i>
16.00 – 16.30	Wang	<i>Representations of $sl(2, C)$ in the BGG category O and master symmetries</i>
16.30 – 17.00	Moreno	<i>Towards an algebraic framework of hydrodynamic integrability</i>
17.00 – 17.15	<i>Coffee Break</i>	
17.15 – 17.45	Roubtsov	<i>Quantization of Poisson structures on Painleve monodromy varieties</i>
17.45 – 18.15	Contatto	<i>Metrisability of projective structures and integrability of particular 2nd order ODEs</i>
18.15 – 18.45	Tarlini	<i>Complete integrability from Poisson-Nijenhuis structures on compact hermitian symmetric spaces</i>

Thursday 25 June 20.00 **Social Dinner**
22.00 Music show

Friday 26 morning session

		CHAIRPERSON: DUBROVIN
09.00 – 09.45	Feher	<i>New developments in the Hamiltonian reduction approach to integrable many-body systems</i>
09.45 – 10.30	Marshakov	<i>Cluster varieties and integrable systems</i>
10.30 – 10.50	<i>Coffee Break</i>	
10.50 – 11.20	Noshchenko	<i>Multilinear Baker-Hirota operators with application to nonlinear differential equations</i>
11.20 – 11.50	Macorini	<i>Higher Spin Lifshitz Theories and the KdV-Hierarchy</i>
11.50 – 12.20	Maslov	<i>Gravipulsons</i>
12.20 – 12.50	Protogenov	<i>Integrability in the systems with Dirac dispersion of low-energy excitations</i>

Friday 26 afternoon session

		CHAIRPERSON: CALOGERO
15.30 – 16.00	Gaillard	<i>Towards a classification of the solutions to the NLS equation</i>
16.00 – 16.30	Skrypnyk	<i>Separation of variables in the Clebsch model</i>
16.30 – 17.00	Marciniak	<i>Separable quantizations of Stäckel systems</i>
17.00 – 17.15	<i>Coffee Break</i>	
17.15 – 17.45	Özemir	<i>Cubic-Quintic NLS Equations with Four-Dimensional Symmetry Algebras</i>
17.45 – 18.15	Smirnov	<i>On the monodromy of almost toric fibrations on the complex projective plane</i>
18.15 – 18.45	Pavlov	<i>Integrable Multidimensional Quasilinear Systems of First Order and Their 1+1 Dimensional Dispersive Reductions</i>
18.45	<i>Closing</i>	

Saturday 27 June: Departure day