

Programme of the 9-th International Workshop on Complex Structures, Integrability and Vector Fields Sofia, August 25-29, 2008

LOCAL ORGANIZERS:

Institute for Nuclear Research
and Nuclear Energy
INRNE

Institute of Mathematics
and Informatics
IMI

BULGARIAN ACADEMY OF SCIENCES

AUGUST 25, IMI

8:30 – 9:00 REGISTRATION
9:00 – 9:20 OPENING

Chairman: S. Dimiev

Complex Structures and Differential Operators

9:20 – 10:00 **K. Sekigawa** Tangent sphere bundles of constant radii
10.00-10.40 **P. Popivanov** Hypoellipticity, solvability, subellipticity and solutions with stationary singularities of pseudodifferential operators with symplectic characteristics
10:40 – 11:00 Coffee break
11:00 - 11:40 **H. Hashimoto** Deformations of almost complex structures of hypersurfaces of purely imaginary octonions
11:40 - 12:20 **T. Adachi** A discrete model of Kähler magnetic fields on a complex space form
12:20 - 13:00 **H. Matsuzoe** Some generalizations of statistical manifolds

Chairman: K. Sekigawa

Complex and Algebraic Structures

15:00 - 15:40 **I. P. Ramadanoff** Monogenic, hypermonogenic and holomorphic Cliffordian functions
15:40 - 16:20 **J. Lee, J. H. Park, K. Sekigawa** Four-dimensional TV Bochner flat almost Hermitian manifolds
16:20 - 16:40 Coffee break
16:40 - 17:20 **Y. Christodoulides** Herglotz functions and spectral theory
17:20 - 18:00 **S. Maeda** A characterization of Clifford minimal hypersurfaces in terms of their geodesics
18:00 - 18:40 **M. J. Hristov** Some geometric properties and objects related to Bézier curves

AUGUST 26, INRNE

Chairman: **P. Popivanov**

Integrability and Vector Fields

- 9:00 – 9:40 **N. A. Kostov, A. V. Tsiganov** Lax pair for restricted multiple three wave interaction system, quasiperiodic solutions and bi-hamiltonian structure
- 9.40-10.20 **R. I. Ivanov** Integrable models for shallow water waves
- 10:40 – 11:00 Coffee break
- 10:20 - 10:40 **D. Henry** Persistence of solutions for some integrable shallow water equations
- 10:40 - 11:20 **T. Valchev** New integrable equations of MKdV type
- 11:20 - 12:00 **G. G. Grahovski** On Nonlinear Schrödinger Equations on Symmetric Spaces and their Gauge Equivalent

Chairman: **T. Adachi**

Integrability and Differential Geometry

- 15:00 - 15:40 **V. S. Gerdjikov, N. A. Kostov** On multicomponent evolution equations on symmetric spaces with constant boundary conditions
- 15:40 - 16:20 **V. M. Vassilev, P. A. Djondjorov, I. M. Mladenov** Integrable dynamical systems of the Frenet-Serret type
- 16:20 - 16:40 Coffee break
- 16:40 - 17:20 **M. Kokubu** On differential geometric aspect of flat fronts in hyperbolic 3-space
- 17:20 - 18:00 **V. A. Atanasov, R. Dandoloﬀ, R. Balakrishnan** Geometry-induced quantum potentials and qubits

AUGUST 27 EXCURSION

AUGUST 28, INRNE

Chairman: **N. Kostov**

Differential Geometry and Quantum Mechanics

- 9:00 – 9:40 **D. A. Trifonov** Pseudo-Hermitian fermion and boson coherent states
- 9.40-10.20 **L. Stepien** On some classes of exact solutions of eikonal equation
- 10:20 – 10:40 Coffee break
- 10:40 - 11:20 **P. Djondjorov, V. M. Vassilev, I. M. Mladenov** Plane curves associated with integrable dynamical systems of the Frenet-Serret type
- 11:20 - 12:00 **B. Z. Iliev** Heisenberg relations in the general case
- 12:00 - 12:40 **S. H. Chun, J. H. Park, K. Sekigawa** Tangent sphere bundles with η -Einstein structure

Chairman: **R. Dandoloﬀ**

Differential Geometry and Complex Structures

- 15:00 - 15:40 **T. Koda** On a variation of the *-scalar curvature
- 15:40 - 16:20 **G. Dimitrov, V. Tsanov** Complex structures related to $SL(3)$
- 16:20 - 16:40 Coffee break
- 16:40 - 17:20 **J. Ławrinowicz, M. Novak-Kepcryk, O. Suzuki** Mathematical outlook of fractals and chaos related to simple orthorhombic Ising-Onsager-Zhang lattices
- 17:20 - 18:00 **S. Dimiev, M. S. Marinov, J. Jelev** Cyclic hypercomplex systems

AUGUST 29, IMI

Chairman: H. Hashimoto

Complex Structures and Vector Fields

- 9:00 – 9:40 **S. Donev, M. Tashkova** On some Strain-Curvature relations on Minkowski space-time
- 9.40-10.20 **M. Manev, M. Teofilova** On the curvature properties of real time-like hypersurfaces of Kähler manifolds with Norden metric
- 10:20 – 10:40 Coffee break
- 10:40 - 11:20 **B. L. Aneva** Exact Solvability from boundary algebra
- 11:20 - 12:00 **L. Apostolova, S. Dimiev** Double-complex Laplace operator
- 12:00 - 12:40 **G. Nakova** Some submanifolds of almost contact manifolds with Norden metric

Chairman: V. Gerdjikov

Complex Structures and Vector Fields

- 15:00 - 15:40 **Y. Euh, J. H. Park, K. Sekigawa** Nearly Kähler manifolds with vanishing TV Bochner curvature tensor
- 15:40 - 16:20 **M. Teofilova** Almost complex connections on almost complex manifolds with Norden metric
- 16:20 - 16:40 Coffee break
- 16:40 - 17:20 **A. Petrov** Ten reasons for pursuing multi-commutative quantum theories
- 17:20 - 18:00 **CLOSING**