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THE JOINT MEETING ON QUANTUM FIELDS AND NONLINEAR PHENOMENA

09-13 March 2016, Sinaia, Romania

- **The 10-th Workshop "Quantum Field Theory and Hamiltonian Systems" (QFTHS)**
Supported by UNESCO Venice Office, Contract AFC 15-08, no. 4500285240.
- **Workshop on "Computational methods in Space Sciences" (COMISIS)**
Supported by ROSA, in the frame of the Project STAR, Contract 72/2013
- **Workshop on "Nonlinear Dynamics and Applications in Plasma Physics" (NODAPP)**
In the frame of FP7-PEOPLE-2012-IRSES-316338, with the support of the Research Funds from the University of Craiova
- **Round table "Evolutionary models for natural systems. Biodiversity conservation and sustainable development" (UNESCO Perspective)**

LIST OF CONTRIBUTIONS

QUANTUM FIELD THEORY AND HAMILTONIAN SYSTEMS (QFTHS)

- 1) **Vladimir Gerdjikov** - On local and nonlocal models of Kulish-Sklyanin type.
- 2) **Mihai Visinescu** - Complete integrability of geodesics and action-angle variables in toric Sasaki-Einstein spaces.
- 3) **Branko Dragovich** - Nonlocal modified gravity.
- 4) **Ion I. Cotaescu** - Isometry generators and canonical quantization on the de Sitter spacetime.
- 5) **Stefan Carstea** - Discrete dynamical systems: how to construct invariants and symmetries.
- 6) **Paul Popescu** - Lagrangians, hamiltonians and foliations.
- 7) Constantin Bizdadea, **Eugen M. Cioroianu**, Solange Odile Saliu - Massive Abelian 1-forms from BRST cohomology.
- 8) **Silviu C. Sararu**, Mihaela T. Udriștioiu - On covariant quantization of the Maxwell-Chern-Simons-Proca model with higher derivatives.
- 9) **Victor E. Ambruș**, Elizabeth Winstanley - Point splitting in quantum field theory on curved spaces.
- 10) **Mihaela-Andreea Baloi**, Cosmin Crucean - Fermion production in a magnetic field in a de Sitter Universe.
- 11) Ion I. Cotaescu, Cosmin Crucean, **Ciprian A. Sporea** - Fermion Scattering on Reissner-Nordstrom charged black holes.
- 12) **Robert Blaga**, Sergiu Busuioc - Quantum corrections to Larmor radiation on the de Sitter spacetime.
- 13) **Serban Suci** - Quantum coherence of two-mode systems in a thermal environment.
- 14) **Glenn Barnich** - Finite BMS transformations.
- 15) **Dan Radu Grigore** - Perturbative QFT in the causal approach - cohomological aspects.
- 16) **George Zoupanos** - Higher-Dimensional Unification with continuous and fuzzy coset spaces as extra dimensions.
- 17) **Dimitar Mladenov** - Bianchi Cosmological Models as Generalized Toda Lattices.
- 18) **Aurelian Isar** - Markovian dynamics of quantum correlations in two-mode Gaussian open systems.
- 19) **Boyka Aneva** - Many Body Systems with a Flow.

COMPUTATIONAL METHODS IN SPACE SCIENCES (COMISIS)

- 1) **Maricel Agop**, Nica Petru Edward, Vlad Ghizdovăț - Some Implications of Onicescu's Informational Energy in Quantum Mechanics.
- 2) **Dan Grecu**, Anca Visinescu, Stefan Carstea, Alexandru Grecu - On the modulation instability for the Ablowitz-Musslimani nonlocal nonlinear Schrodinger equation.
- 3) **Dumitru N. Vulcanov** - Computational methods in the study of the geodesic movement of particles in gravitational fields.
- 4) Rodica Cimpoiasu, **Radu Constantinescu** - Conservation laws and solutions of 2D Ricci flow in the solitonic sector.
- 5) **Dragoljub D. Dimitrijevic**, Goran S. Djordjevic and Milan Milosevic - Non-standard Lagrangian of DBI-type for a Constrained System.

NONLINEAR DYNAMICS AND APPLICATIONS IN PLASMA PHYSICS (NODAPP)

- 1) **Florin Spineanu**, Madalina Vlad - A MHD invariant with effects on the confinement regimes in Tokamak.
- 2) **Dana Constantinescu**, M. Negrea, I. Petrisor - Anisotropic fractional transport models in fusion plasmas.
- 3) **Marian Negrea**, I. Petrisor, D. Constantinescu - Motion of charged particles in tokamak perturbed toroidal magnetic field.
- 4) M. Negrea, **Iulian Petrisor**, D. Constantinescu - Influence of the gradient pressure and magnetic field inhomogeneity on dust dynamics in tokamak plasma.
- 5) **Andreea Croitoru**, Madalina Vlad, Florin Spineanu - Nonlinear effect in collisional particle transport in a space-variable stochastic magnetic field.
- 6) **Alexei Zubarev**, Florin Spineanu, Madalina Vlad - Stationary asymptotic states in 2D MHD as Painleve transcendents.
- 7) **D. I. Palade**, A. Croitoru, M. Vlad, F. Spineanu - Turbulent transport of alpha particles in drift type turbulence in tokamak.
- 8) **Virgil Baran**, Florin Spineanu, Madalina Vlad - Conformal invariance and vorticity concentration in fluid flows.
- 9) **G. Steinbrecher**, G. Sonnino, N. Pometescu - Generalized Renyi entropy as Liapunov functional, maximal entropy distribution functions.
- 10) **Calin V. Atanasiu**, L.E. Zakharov, K. Lackner, M. Hoelzl, E. Strumberger - Simulations of plasma wall-touching kink and vertical modes in tokamak.
- 11) **Madalina Vlad**, Florin Spineanu - Turbulence and zonal-flow generation: a semi-analytical study based on the iterated self-consistent method.

POSTER SESSION

QFTHS

- 1) Tatiana Mihaescu, Aurelian Isar - Generation of quantum discord in Gaussian systems in a thermal environment.
- 2) Nicoleta-Corina Babalic, Stefan Carstea - Supersymmetric Gardner equation and its soliton solutions.
- 3) Stefan Mladenov - T-duality of Pilch-Warner background and its pp-wave limit.

COMISIS

- 4) Rodica Cimpoiasu, Radu Constantinescu - First integrals and integrating factors for some NODEs through lambda-symmetries.
- 5) Alina Boldea, Marian Predatu - Light-curves of Near Earth Asteroids through computational methods.
- 6) Carmen Ionescu, Mihai Stoicescu, Alina Streche - A special case of Chua system. Chaos and regular behavior.

NODAPP

- 7) Raluca Efrem – Routes to chaos for a 3D-model from Plasma Phys.
- 8) Daniel Dumitru - MeshFree Simulations for Resistive Wall Modes in Tokamak.



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