



Department of Physics
University o Craiova



Southeastern
European Network –
MTP



Romanian Space
Agency



European Physical
Society

**THE JOINT MEETING
ON QUANTUM FIELDS AND NONLINEAR PHENOMENA
18-22 April 2018, Sinaia, Romania**

Scientific Contributions

April 19th – Morning Sessions

- Marc Henneaux (UL Bruxelles, Belgium) – Gravitational electric-magnetic duality and exotic theories of gravity.
- Lars Brink (Chalmers UT, Sweden) - Exceptional vs super-Poincaré algebra as the defining symmetry of maximal Supergravity.
- Mihai Visinescu (IFIN-HH Bucharest, Romania) – Integrability of the geodesic flow on the resolved cones over five-dimensional Sasaki-Einstein space T(1,1).
- Branko Dragovich (Inst. of Phys. Belgrade, Serbia) - Cosmology of Nonlocal Gravity.
- Dan Radu Grigore (IFIN-HH Bucharest)-Anomaly-Free Gauge Models: A Causal Approach.
- Victor Ambrus (WU Timișoara, RO)- Quantum corrections in rigidly-rotating systems.
- Vladimir Gerdjikov (Bulgarian Academy of Sciences) – On the soliton solutions of Tzitzeica equation.

April 20th – Morning Sessions

- Loriano Bonora (ICTP Trieste, Italy) -Revisiting anomalies.
- Ignatios Antoniadis (Univ.Bern, Switzerland) - Inflation from supersymmetry breaking.
- Ion Cotaescu (WU Timisoara, Romania) – Classical motion on hyperbolic space-times of any dimensions.
- Argyris Nicolaïdis (Aristotle Univ.Thessaloniki, Greece)- Quantum Space Experiments.
- Adrian Stefan Carstea (IFIN HH Bucharest, Romania) - Bilinear approach to lattice super-KdV equation and super-QRT mappings.
- Goran Djordjevic (Univ.Nis, Serbia) – Tachyon fields and RSII inflatory models.
- Constantin Bizdadea, Eugen M.Cioroianu, Odile S. Saliu (Univ.Craiova) – Gauge-invariant massive BF models.
- Constantin Bizdadea, Eugen M. Cioroianu, Odile S. Saliu (Univ.Craiova, Romania) – Exotic predictions of the standard symmetry-breaking mechanism.



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April 20th – Afternoon Sessions

- Mihaela Baloi (WU Timisoara, Romania) - Fermion production in early Universe.
- Dumitru Vulcanov (WU Timisoara, Romania) - Computer algebra package for Cosmology. A review and recent results.
- Eugen M.Cioroianu¹, Cornelia Vizman² (¹Univ.Craiova, ²WU Timisoara, Romania) – Locally conformal symplectic manifolds in the line bundle approach.
- Marcela Popescu, Paul Popescu (Univ. Craiova) - On skew-symmetric algebroids.
- Dumitru Cozma (Tiraspol State University, Moldova) - Algebraic solutions and limit cycles in cubic differential systems with a weak focus.
- Dumitru Botnaru, Olga Cerbu (Tiraspol State University, Moldova) - Reflector functors as monofunctors.
- Gertrud Zwicknagl (TU Braunschweig, Germany) - New frontiers in superconductivity: novel states and properties from topology and interfaces.
- Dan Grecu, Alex. Grecu (IFIN-HH Bucharest, Romania) - Head on colission of KdV dust acoustic solitons in a dusty plasma with dust grain- size distribution.
- Aurelian Isar (IFIN-HH Bucharest, Romania) - Generation of quantum correlations in Gaussian open systems.
- Ciprian Sporea (WU Timisoara) - Greybody coefficients for Schwarzschild-de Sitter black holes in n-dimensions: spin $\frac{1}{2}$ fields.
- Corina N. Babalic¹, A. S. Carstea² (¹Univ.Craiova, ²IFIN-HH Bucharest, Romania) - Bilinear form and soliton solutions for Kuperschmidt super-KdV equation.
- Mirela Babalic^{1,2}, Calin Lazaroiu², Dmitry Doryn², Mehdi Tavakol² (¹IFIN-HH, ²IBS-CGP Pohang, South Korea) - Generalized B-type Landau-Ginzburg theories

April 21st - Morning Sessions

- Olgierd Dumbrajs (Univ. Latvia, Latvia) - Two time scales in gyrotron partial differential equations.
- Loukas Vlahos (Aristotle Univ. Thessaloniki, Greece) - Particle acceleration and heating during turbulent reconnection.
- Valerij Romanovskij (Univ.Maribor, Slovenia) - First integrals and invariant surfaces of the May-Leonard differential system.
- Glenn Barnich (UL Bruxelles, Belgium) - TBA
- Silviu C. Sararu, Mihaela Udrisioiu (Univ.Craiova, Romania) - Higher order massive Chern-Simons model. A first-class approach.
- Florin Spineanu, Madalina Vlad (IFIN-HH Bucharest, Romania) - The singularities of the extremal states in plasma and fluids.
- Madalina Vlad, Florin Spineanu (IFIN-HH Bucharest, Romania) - Hidden drifts and turbulence relaxation in Euler fluids.



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- Virgil Baran¹, Florin Spineanu², Madalina Vlad² (¹Univ.Bucharest, ²IFIN-HH Bucharest, Romania) - Trapped Electron Mode Driven Turbulence: Test Modes Analysis.

April 21st – Poster Session

- Afrodita L. Boldea¹, Costin Boldea², Gabriela M.Stoicescu², Mihai A.Stoicescu² (¹IFIN-HH, ²Univ.Craiova) – Light curve analysis for the detection of exoplanets.
- Radu Constantinescu, Aurelia Florian, Carmen Ionescu, Alina M. Pauna (Univ.Craiova, Romania) - Methods for solving solitonic equations. Examples.
- Stefan A. Irimiciuc, Bianca Hodoroaba ("Al. I. Cuza" University of Iasi, Romania) - Neutral beam behaviors in a complex gravito-electromagnetic field.
- Mihaela Baloi, Cosmin Crucean, Diana Popescu (WU Timisoara, Romania) - Scalar pair production in magnetic fields on de Sitter Universe.
- M. Cuzminschi (IFIN-HH Bucharest, Romania) - Plasma Waves in Arrays of Josephson Junctions.
- M. Popescu¹; O. Vaduvescu²; R.M. Gherase³; M. Predatu⁴; M. Cirstea⁵; N. Strinu⁶ (¹IMCCE, Observatoire de Paris, Sorbonne Universités, Univ. Lille, France, ²Isaac Newton Group of Telescopes (ING), Canary Islands, Spain, ³Astronomical Institute of the Romanian Academy, Bucharest, Romania, ^{4,5,6} Univ. Craiova, Romania) – Near-Earth asteroids spectroscopic survey with Isaac Newton Telescope
- Serban Suciu, Aurelian Isar - Quantum Resource Theory
- George Cristian Ivan, Aurelian Isar - Non-Markovian Gaussian channels
- Tatiana Mihaescu, Aurelian Isar - Evolution of quantum steering in a Gaussian noisy channel

April 21st – Afternoon Sessions

- Rodica Cimpoiasu, Radu Constantinescu (Univ. Craiova, Romania)–Symmetries and invariant solutions of a nonlinear model for ultrashort pulses.
- Teddy Craciunescu (IFIN-HH Bucharest, Romania) – Participation of Romania to EUROFusion Program.
- D. I. Palade (IFIN-HH Bucharest, Romania) - Turbulence and instabilities in quantum plasmas: pressure effects
- Alexei Zubarev, Florin Spineanu, Madalina Vlad (IFIN-HH Bucharest, Romania) - Self-organization in mesoscopic plasmas
- A.M. Croitoru, Florin Spineanu, Madalina Vlad (IFIN-HH Bucharest, Romania) - Contributions to the generation of an Internal Transport Barrier
- Dana Constantinescu, Raluca Efrem (Univ. Craiova, Romania) - Applications of fast slow systems in plasma physics and cosmology.
- Liliana M.Bucur, Aurelia Florea (Univ.Craiova, Romania) – Lyapunov exponents and sensitivity for some processes.



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- Adela Ionescu, Raluca Efrem (Univ.Craiova, Romania) - Linearization and control for nonlinear dynamical systems from physics.
- Marian Negrea, Iulian Petrisor (Univ.Craiova) – Diffusion of anisotropic stochastic magnetic field with average poloidal magnetic component.