

THIRTEENTH SYMPOSIUM ON INTEGRABLE SYSTEMS

Zielona Góra, Poland, October 18–19, 2021

Institute of Physics, Prof. Szafrana 4a, lecture hall 106

Monday, October 18, 2021

Morning session

Session dedicated to Prof. Piotr Rozmej

- 8.55–9.00 OPENING
- 9.00–9.40 A. SERGYEV (Opava): **Isothermal no-slip drift flux model: symmetries, exact solutions and more**
- 9.40–10.10 V. CAO LONG (Zielona Góra): **Brief overview of methods for obtaining soliton solutions**
- 10.10–10.50 P. ROZMEJ (Zielona Góra): **(2+1)-dimensional nonlinear wave equations in an ideal fluid mode**

Coffe Break

- 11.05–11.45 M. DUNAJSKI (Cambridge): **The quadric ansatz for the mn -dispersionless KP equation**
- 11.45–12.25 W. KRYŃSKI (Warszawa): **Causal structures and integrable systems**
- 12.25–13.00 A. PANASYUK (Olsztyn): **On linear-quadratic Poisson pencils and associative Yang-Baxter equation**
- 13.00–14.00 *Lunch*

Afternoon session

- 14.00–14.40 P. GOLDSTEIN (Warszawa): **Exact solution for BKL asymptotics of Einstein's equations near cosmological singularity**
- 14.40–15.15 A. SZERESZEWSKI (Warszawa): **Self-dual Einstein spaces via privileged coordinates**

Coffee break

- 15.30–16.10 A. K. PRYKARPATSKI (Kraków): **On interesting relationships between the generalized Riemann type hydrodynamic hierarchy and the Camassa-Holm, Degasperis-Processi and other related integrable systems**
- 16.10–16.30 M. NIESZPORSKI (Warszawa): **Integrable two-component systems of difference equations**

- 16.30–17.00 Z. DOMAŃSKI (Poznań): **Wigner distributions in quantum mechanics with minimal length**
- 17.00–17.30 A. MACIEJEWSKI (Zielona Góra): **(Non)Integrability of Hamiltonian systems with velocity dependent potential**

19.00 *Dinner* Ruben Hotel, Aleja Konstytucji 3 Maja 1a Street

Tuesday, October 19, 2021

Morning session

- 9.00–9.40 K. MARCINIAK (Linköping): **Systematic deforming of Stäckel systems to non-autonomous Frobenius integrable Hamiltonian systems of Painlevé type**
- 9.40–10.20 M. BŁASZAK (Poznań): **Multi-component Painlevé ODE's and related non-autonomous KdV hierarchies**
- 10.20–10.50 A. DOBROGOWSKA (Białystok): **Generalization of the concept of classical r -matrix to Lie algebroids**

Coffee break

- 11.05–11.45 A. DOLIWA (Olsztyn): **Hermite-Pade approximants and Hirota's discrete KP equation**
- 11.45–12.05 W. SZUMIŃSKI (Zielona Góra): **A new sight into the dynamics and integrability of Swinging Atwood Machine-like systems with Coulomb's and Hooke's interactions**
- 12.05–12.40 T. COMBOT (Dijon): **Classification of integrable planar homogeneous polynomial potentials up to degree 7**
- 12.40–13.00 S. KONDEJ (Zielona Góra): **Optimization problem for star shape potentials**
- 13.00–14.00 *Lunch*

Afternoon session: Modeling of structures and physico-chemical processes

- 14.00–14.15 M. DUDEK (Zielona Góra): **Sessile droplet deposits for sensorics**
- 14.15–14.30 W. WOLAK (Zielona Góra): **The process of drying a droplet of an aqueous suspension of magnetic iron**
- 14.30–14.45 M. MARĆ (Zielona Góra): **Evaporation of sessile droplet with magnetic nanoparticles**

Coffee break

- 15.00–15.20 A. DRZEWIŃSKI (Zielona Góra): **Destabilization of the aqueous suspension of magnetic nanoparticles in the AC magnetic field**
- 15.20–15.40 K. DUDEK (Zielona Góra): **Ability of 3D mechanical metamaterials to self-rotate**