

## Schedule

**Thursday, September 26**

**Faculty of Sciences (3 Maja st. 54), 3d floor, Lecture Hall "Aula 303"**

09:00 – 10:15 Registration  
10:15 – 10:30 Opening  
10:30 – 11:00 Coffee Break

**Session Chair: Alexander Prokopenya**

11:00 – 11:45 **Robert Kragler**  
The tanh-coth method (TaCoM). Implementation of the tanh-coth method to obtain symbolic solutions for several families of nonlinear PDEs

11:50 – 12:20 **Valery Taranchuk**  
Methods and tools of intelligent data processing for geological models

12:20 – 12:45 **Valery Taranchuk, D. Barovik**  
Numerical modelling of surface forest fire spread in nonuniform woodland

12:45 – 13:15 **Valerii Samoilenko, Yu. Samoilenko, V. Vovk**  
Asymptotic soliton-like solutions to the singularly perturbed Korteweg-de Vries equation with variable coefficients at zero background

13:15 – 14:30 Lunch

**Session Chair: Robert Kragler**

14:30 – 15:00 **Setsuo Takato, J.A. Vallejo, A.N. Prokopenya**  
KeTCindy/KeTCindyJS a bridge between teachers and students

15:00 – 15:30 **Vasile Glavan, V. Gutu**  
Strong chain-recurrence in set-valued dynamics

15:30 – 15:45 **Anna Wawrzaszek, A. Krasinska**  
Analysis of a generalized Lorenz model

15:45 – 16:00 **Sebastian Domijanski, A. Gil-Swidarska**  
Are the stock exchange quotations of energy operators in Poland sensitive to changes in cryptocurrencies?

16:00 – 16:15 **Monika Berendt-Marchel, A. Wawrzynczak**  
Artificial neural network training in Matlab with the use of deep learning toolbox

16:15 – 16:45 Coffee Break

**Session Chair: Vasile Glavan**

- 16:45 – 17:20 **Robert Kragler**  
Exact solutions of a coupled system of Diffusion-Convection  
type equations modeling lake sedimentations

## **Friday, September 27**

**3 Maja st. 54, Faculty of Sciences, 3d floor, Lecture Hall "Aula 303"**

**Mini-Symposium on Computational Aspects of Classical  
and Celestial Mechanics**

**Session Chair: Pavel S. Krasil'nikov**

- 09:00 – 09:45 **Katica R. (Stevanovic) Hedrih**  
Acceleration of the second order – jerk of a rigid body  
rotates around a fixed point
- 09:45 – 10:15 **Katica R. (Stevanovic) Hedrih**  
Acceleration of the second order (Jerk) of a kinetic point  
moving with constant sectorial velocity  
as well as of the planet moving
- 10:15 – 10:45 **Alexander N. Prokopenya**  
Constructing a periodic solution of the equations of motion  
of a generalized Atwood's machine with Mathematica
- 10:45 – 11:15 Coffee Break
- Session Chair: Katica R. Hedrih**
- 11:15 – 11:45 **Agnieszka Siluszyk**  
On unique convex isosceles trapezoid configuration
- 11:45 – 12:15 **Oralkhan Baisbayeva, M.Zh. Minglibayev, A. Prokopenya**  
Secular perturbations of translational-rotational motion  
of a non-stationary triaxial body in a central gravitational field
- 12:15 – 12:40 **Vasily Dikusar, A. Yatsko**  
Optimal control of train on uneven surface profile
- 12:40 – 13:10 **Pavel S. Krasil'nikov**  
Coupled orbit-attitude motions of rod in Copenhagen  
three-body problem: integral manifolds
- 13:00 – 14:30 Lunch
- Session Chair: Krzysztof Iskra**
- 14:30 – 15:00 **Alexander V. Chichurin, E. Ovsyuk, V. Redkov**  
On tunneling spin particles through Schwarzschild barrier

- 14:50 – 15:10 **Paweł Wolinski**, M. Siluszyk, W. Wozniak, K. Iskra, M.V. Alania  
Study of the interplanetary magnetic field turbulences in relations  
with the long-term variations of galactic cosmic ray intensity  
for different polarities of solar global magnetic field (1969 – 2011)
- 15:10 – 15:30 **Renata Modzelewska-Łagodzin**  
Cosmic ray anisotropy
- 15:30 – 15:50 **Anna Wawrzyńczak-Szaban**, P. Kopka  
Estimation of the diffusion coefficient parameters  
during the Forbush decrease of galactic cosmic ray intensity  
by the approximate Bayesian computation method
- 15:50 – 16:20 **Agnieszka Gil-Swidorska**  
CAS in studies of space weather effects on the energy  
infrastructure in Poland
- 16:20 – 16:40 **Marek Siluszyk**, S. Moskwa  
Blackout in Europe in the 21st century – preliminary study
- 19:00 – 24:00 Conference Dinner

## **Saturday, September 28**

- 10:00 – 17:00 Excursion and sightseeing