

Schedule

Thursday, October 22

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

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

Session Chair: Alexander Prokopenya

11:00 – 11:45 **Robert Kragler**
Using the method of inverse differential operators (MIDO)
11:45 – 12:25 **Viktor Korzyuk**, I.I. Staliarchuk
Mixed problem for Klein-Gordon-Fock equation with curve
derivatives in boundary conditions
12:25 – 13:00 **Henryk Żołądek**, Galina Filipuk
Painlevé equations, elliptic integrals and elementary functions
13:00 – 14:30 Lunch

Session Chair: Robert Kragler

14:30 – 15:00 **Andrzej Woszczyzna**, S. Kubis, W. Czaja, Z.A. Golda,
P. Plaszczyk, M. Kutschera
Relativistic self-gravitating gaseous clouds with the singular
conformal curvature
15:00 – 15:20 **Alexander Chichurin**, E. Ovsyuk, A.Redko, V. Redkov
Spin 1 particle in the Coulomb field on the background of Lobachevsky
geometry: general Heun functions, analytical and numerical study
15:20 – 15:40 **Alexander Chichurin**, A. Shvychkina
Simulating the population dynamics of the bacterial plasmids
with the equal half-saturation constants
15:40 – 16:00 E. Szczepanik, **Alexey Tret'yakov**
Algorithm of the method for solving degenerate sub-definite
nonlinear equations
16:00 – 16:20 **V. Glavan**, V. Gutu
Eventually contracting affine IFS
16:20 – 16:40 Coffee Break

Session Chair: Vasile Glavan

16:40 – 17:00 **S. Keska**
On Hausdorff moment sequences under permutation
17:00 – 17:20 **P. Wolinski**, P. Woyciechowski
Mathematical model of carbonization concrete
with calcareous fly ash
17:20 – 17:35 **V. Taranchuk**, V. Kulinkovich
On the preparation and distribution of interactive graphics

- applications using Mathematica
- 17:35 – 17:50 **V. Taranchuk**, V. Kulinkovich
On programming interactive graphics applications in Mathematica system
- 17:50 – 18:05 **Z.Z. Rzeszotko**
Time series analysis for some market indices
- 18:05 – 18:20 **A. Jatsko**, S. Zasukhin
Optimal control problems with control-state constraints
- 18:20 – 18:35 V. Dikusar, **N. Olenov**
Parallel programming in MATLAB for modeling an economy
- 18:35 – 18:50 N.N. Aprausheva, **V.V. Dikusar**, S.V. Sorokin
Gradient-statistical algorithm for calculating critical points of density probability of Gaussian mixture
- 18:50 – 19:05 **V. Dikusar**, M. Wojtowicz, E. Zasukhina
Solving optimal control problems with control-state constraints
- 19:05 – 19:20 V.R. Sultanov, **V.V. Dikusar**
Optimal selection of task team

Friday, October 23

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: Katica R. Hedrih

- 09:00 – 09:45 **Katica R. Hedrih**
Rolling heavy disk along rotating circle with constant angular velocity
- 09:45 – 10:15 K.A. Antipov, **Alexey A. Tikhonov**
On computer algebra systems in the modeling of the Earths magnetic field and satellite dynamics
- 10:15 – 10:45 M.P. Kharlamov, **Pavel E. Ryabov**
Phase topology of the Kowalevski Komarov Sokolov top
- 10:45 – 11:05 I.I. Kharlamova, **Pavel E. Ryabov**
An example of the constructor of topological invariants for integrable Hamiltonian systems with parameters
- 11:05 – 11:30 Coffee Break
- Session Chair: Alexey A. Tikhonov**
- 11:30 – 12:00 **Agnieszka Siluszyk**
The finiteness in the circular restricted five-body problem
- 12:00 – 12:30 **Alexander Prokopenya**, M.Zh. Minglibayev, and B.A. Beketauov
Studying the evolutionary equations in the restricted three-body problem with variable masses
- 12:30 – 13:00 **Margarita Maksimenko**
Numerical algorithm for calculation of the stress state of a rock massif including the mine in MATLAB
- 13:00 – 13:30 A.F. Mselati, **Sergei Bosiakov**
Conditions for translational movement of the composite paraboloid with one plane of symmetry
- 13:30 – 15:00 Lunch break
- Session Chair: Michail Alania**
- 15:00 – 15:20 **Michail V. Alania**, G.G. Didebulidze, R. Modzelewska, M. Todua, A. Wawrzynczak
Annual variations of the galactic cosmic ray intensity and seasonal distribution of the cloudless days and cloudless nights in Abastumani (41.75 N, 42.82 E; Georgia):
(1) experimental study and (2) theoretical modeling
- 15:20 – 15:40 **Agnieszka Gil**
Modulation of galactic cosmic rays during the unusually prolonged solar minimum of 2007–2009

- 15:40 – 16:00 K. Iskra, R. Modzelewska, M. Siluszyk, M. Alania,
W. Wozniak, P. Woliski
The estimation of the parameters characterizing the galactic cosmic ray modulation based on the measurements of the anisotropy in different sectors of the interplanetary magnetic field
- 16:00 – 16:20 **M. Siluszyk**
Theoretical and experimental study of the 11-year variations of galactic cosmic ray intensity
- 16:20 – 16:40 M. Siluszyk, K. Iskra, M. Alania, **S. Miernicki**
Properties of the interplanetary magnetic field turbulence in different cycles of solar activity
- 16:40 – 17:00 A. Wawrzynczak, **R. Modzelewska**, A. Gil, M. Kluczek
Solving the stochastic differential equations equivalent to Parkers transport equation by the various numerical methods.
Model of the 27-day variation of cosmic rays
- 17:00 – 17:20 Coffee Break
- Session Chair: Agnieszka Prusińska**
- 17:20 – 17:40 D. Pylak, **P. Karczmarek**
The full proof of the error estimates of approximate solutions of a singular integral equation on the quarter plane
- 17:40 – 17:55 **T. Botchorishvili**
On some properties of the rapidly converging series for computing π
- 17:55 – 18:15 M. Jakubiak, D. Kozak-Superson, **A. Prusinska**
Mankiw-Romer-Weil model of economic growth dynamics with Cobb-Douglas production function in Mathematica
- 19:30 – 24:00 Conference Dinner

Saturday, October 24

- 09:30 – 19:00 Excursion and sightseeing