RECENT DEVELOPMENTS IN ASTRONOMY, ASTROPHYSICS, SPACE AND PLANETARY SCIENCES

International Conference, 27-29 May 2019, Cluj-Napoca

Programme

ROMANIAN ACADEMY
ASTRONOMICAL INSTITUTE
CLUJ-NAPOCA BRANCH - ASTRONOMICAL OBSERVATORY
ROMANIAN NATIONAL COMMITTEE OF ASTRONOMY

"BABEŞ-BOLYAI" UNIVERSITY CLUJ-NAPOCA
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE
FACULTY OF PHYSICS

In the framework of Cluj Academic Days 2019

Monday, May 27th 2019

Astronomical Observatory Cluj-Napoca
Str. Cireşilor nr. 19

9:30

Registration

10:00

Plenary session 1
Chairman: Vlad TURCU

Ferenc SZENKOVITS
Faculty of Mathematics and Computer Science, Babeş-Bolyai University, Cluj-Napoca, Romania
> ***The Jesuit astronomers Nicolaus Ianosi and Maximilian Hell in Cluj***

Tiberiu HARKO[1,2,3]
[1]Department of Physics, "Babeş-Bolyai" University, Cluj-Napoca, Romania
[2]School of Physics, Sun Yat-Sen University, Guangzhou, People's Republic of China
[3]Department of Mathematics, University College London, London, United Kingdom
> ***The geometric trinity of gravity: one in three, or three in one?***

Zoltán KERESZTES
Theoretical Department of Physics at the University of Szeged, Hungary
> ***The motion and spin evolution of extended bodies in rotating black hole spacetimes***

Coffee & tea break

12:00

Plenary session 2
Chairman: Tiberiu HARKO

Bence RACSKÓ, László Á. GERGELY
University of Szeged, Hungary
> ***Null shells in kinetic gravity braiding scalar-tensor theories***

Bogdan DĂNILĂ, Gabriela BLAGA, Vlad TURCU
Romanian Academy, Cluj-Napoca Branch, Astronomical Observatory, Cluj-Napoca, Romania
> ***On the degradation of magnetic field measurements due to "the new thermomagnetic effect". Theory and simulations***

Diana BEŞLIU-IONESCU [1,2], Dan Alin NEDELCU [1]
[1] Astronomical Institute of the Romanian Academy, Bucharest, Romania
[2] Institute of Geodynamics „Sabba S. Ştefănescu" of the Romanian Academy
> ***Analysis of Correlations between the Orbital Decay of Vanguard Satellites and Solar Activity***

14:30

Lunch

16:30

Plenary session 3
Chairman: Cristina BLAGA, Alexandru MARCU

Carolina OPINCA
Faculty of Mathematics and Computer Science, Moldova State University, Chişinău, Republic of Moldova
   Astronomical computation and data with Wolfram technologies

Radu Dan CAPITAN
Astronomical Institute of the Romanian Academy, Bucharest, Romania
   Spatial Interaction Modeling of Star Clusters in M83 Galaxy

Coffee & tea break

18:00

Plenary session 3 continuation

M. YOUSEFI[1], C. WACHIURI[1], V. PALITHARATHNA[1], M. HAMDY[1], B. TLILI[1], M. BĂRBOSU[2], W. A. SAMAD[1]
[1] Rochester Institute of Technology – Dubai, UAE
[2] Rochester Institute of Technology – New York, USA
   Thermal protection system for the reentry capsule module of a cubesat

Ioana BOACĂ [1], Simon ANGHEL [1,3], Mădălina TRELIA [4], Dan Alin NEDELCU [1,2], Mirel BÎRLAN [2,1]
[1] Astronomical Institute of the Romanian Academy, Bucharest, Romania
[2] Institut de Mécanique Céleste et des Calculs des Éphémérides, CNRS UMR8028, Observatoire de Paris, PSL Research University, Paris, France
[3] Faculty of Physics, University of Bucharest, Ilfov, Romania
[4] Romanian Space Agency, Bucharest, Romania
   The current status of MOROI network. Astrometric reduction of multistation events and meteoroids orbits

19:00

Poster session 1

19:30

Dine Around

Astronomical Observatory Cluj-Napoca
Str. Cireşilor nr. 19

10:00

Plenary session 4
Chairman:Dan Alin NEDELCU

Ákos BASZÓ, Elke PILAT-LOHINGER
University of Vienna, Department of Astrophysics, Vienna, Austria
   A multi-parameter survey of secular perturbations in circumstellar planetary systems of binary star

Alexandru POP
Romanian Academy, Cluj-Napoca Branch, Astronomical Observatory, Cluj-Napoca, Romania
   The signature of precession on the Light Travel Time Effect in variable stars with unseen companions

Adrian ŞONKA[1,2*]**, Mirel BÎRLAN**[3,1]**, Andreea GORNEA**[1]**, Ioana BOIAN**[1]
[1]Astronomical Institute of Romanian Academy, Cutitul de Argint, 040557 Bucharest, Romania
[2]Faculty of Physics, University of Bucharest, 405 Atomistilor, 077125 Magurele, Ilfov, Romania
[3]IMCCE, Observatoire de Paris 77 av Denfert Rochereau, 75014 Paris Cedex, France
   Photometry of selected NEA sample in Bucharest

Coffee & tea break

12:00

Plenary session 5
Chairman: Mihail BĂRBOSU

M. BÎRLAN[1,2], A. ŞONKA[1,3], D. A. NEDELCU[2,1], M. BĂLAN[4], S. ANGHEL[1,3], C. PANDELE[4], M. TRUŞCULESCU[4], C. DRĂGĂŞANU[4], V. PLESCA[5,6], C. H. GANDESCU[5,6], C. BANICA[5,6], T. GEORGESCU[7]
[1]IMCCE, Observatoire de Paris, France
[2]Romanian Academy, Astronomical Institute, Bucharest, Romania
[3]Bucharest University, Romania
[4]ISS, Romania
[5]Wing Computer, Romania
[6]FEE, Politehnica University, Romania
[7]Elcos Proiect, Romania
       Optical asset on mobile platform

Alexandru POP [1], Maria CRĂCIUN [2], Vlad TURCU [1]
[1] Romanian Academy – Cluj-Napoca Branch, Astronomical Institute, Astronomical Observatory Cluj-Napoca, Cluj-Napoca, Romania
[2] Romanian Academy – Cluj-Napoca Branch, "T. Popoviciu" Institute of Numerical Analysis, Cluj-Napoca, Romania
       Detection of a low level period variability in the pulsating star SZ Lyncis

Simon ANGHEL[1,3], Dan Alin NEDELCU[1,2], Mirel BÎRLAN[2,1], Ioana BOACĂ[1]
[1]Astronomical Institute of the Romanian Academy, Bucharest, Romania
[2]Institut de Mécanique Céleste et des Calculs des Éphémérides, CNRS UMR8028, Observatoire de Paris, PSL Research University, Paris, France
[3]Faculty of Physics, University of Bucharest, Ilfov, Romania
       Photometry of all-sky cameras: preliminary results for MOROI network

14:30

Lunch

Plenary session 6
Chairman: Alexandru POP, Mirel BÎRLAN

Cecília GERGELY, Zoltán KERESZTES, László Á. GERGELY
University of Szeged, Hungary
> *Gravitational dynamics in a 2+1+1 decomposed spacetime along nonorthogonal double foliations: Hamiltonian evolution and gauge fixing*

Cristina BLAGA [1], Paul BLAGA [1], Tiberiu HARKO[2,3,4]
[1]Faculty of Mathematics and Computer Science, Babeş-Bolyai University, Cluj-Napoca, Romania
[2]Department of Physics, "Babeş-Bolyai" University, Cluj-Napoca, Romania
[3]School of Physics, Sun Yat-Sen University, Guangzhou, People's Republic of China
[4]Department of Mathematics, University College London, London, United Kingdom
> *Jacobi stability analysis of the circular restricted three body problem with drag forces*

Coffee & tea break

18:00

Plenary session 3 continuation

Maria CRĂCIUN[1], Tiberiu HARKO[2,3,4]
[1]Tiberiu Popoviciu Institute of Numerical Analysis, Romanian Academy,Cluj-Napoca,
[2]Department of Physics, "Babeş-Bolyai" University,Cluj-Napoca, Romania
[3]School of Physics, Sun Yat-Sen University, Guangzhou, People's Republic of China
[4]Department of Mathematics, University College London, London, United Kingdom
> *Galactic rotation curves in Bose-Einstein Condensate dark matter models*

Vlad TURCU [1], Octavian CRISTEA [2], Dan MOLDOVAN [1], Paul DOLEA[2]
[1] Romanian Academy, Cluj-Napoca Branch, Astronomical Observatory, Cluj-Napoca, Romania
[2] BITNET CCSS Cluj-Napoca, Str. Madach Imre, Nr. 6, Cluj-Napoca, Romania.
> *Observation and Validation Experiments in Medium Earth Orbits*

19:00

Poster session 2

19:30

Dine Around

Wednesday, May 29th 2019

Astronomical Observatory Cluj-Napoca
Str. Cireşilor nr. 19

10:00
Masa Rotundă
(Round Table)

Corelarea învăţământului astronomic cu evoluţia cercetării astronomice în România
(Correlation between education in astronomy with astronomical scientific research in Romania)

Moderatori (Moderators): Mirel BÎRLAN, Ferenc SZENKOVITS

Coffee & tea break

12:30

Conference concluding remarks

Dan Alin NEDELCU, Vlad TURCU

POSTER PRESENTATIONS

Brahim BENHAMMOUDA[1]**, Abdalla MANSUR**[1]**, Muhammad SHOAIB**[1]**,
Iharka SZÜCS-CSILLIK**[2]
[1]Abu Dhabi Men's College, Higher Colleges of Technology, Abu Dhabi, United Arab Emirates
[2]Romanian Academy, Cluj-Napoca Branch, Astronomical Observatory, Cluj-Napoca, Romania
> ***The dynamics of some orbits in the triangular and rhomboidal four-body problem***

Doina IONESCU
Romanian Academy, Astronomical Institute, Bucharest, Romania
> ***The revolution of Copernicus***

Doina IONESCU
Romanian Academy, Astronomical Institute, Bucharest, Romania
> ***On the Taurus constellation***

Mira-Cristiana ANISIU[1]**, Iharka SZÜCS-CSILLIK**[2]
[1] Romanian Academy – Cluj-Napoca Branch, "T. Popoviciu" Institute of Numerical Analysis, Cluj-Napoca, Romania
[2] Romanian Academy, Cluj-Napoca Branch, Astronomical Observatory, Cluj-Napoca, Romania
> ***An analytic study of exponential-type potentials***

Nataša TODOROVICI
Astronomical Observatory of Belgrade, Belgrade, Serbia
> ***132 years of the Astronomical Observatory in Belgrade***

Mirela BIVOLARU[1]**, Dan Alin NEDELCU**[2]**, Iharka SZÜCS-CSILLIK**[3]
[1]Romanian Space Agency, Bucharest, Romania
[2]Romanian Academy, Astronomical Institute, Bucharest, Romania
[3]Romanian Academy, Cluj-Napoca Branch, Astronomical Observatory, Cluj-Napoca, Romania
> ***Tracking some space debris around the earth***

Remus BOATĂ
Romanian Academy, Timişoara Branch, Astronomical Observatory, A. Sever Sq. 1, 300210 Timişoara, Romania
> ***Functional fuzzy systems for forecasting the sunspot number***

Vlad TURCU, Dan MOLDOVAN, Iharka SZÜCS-CSILLIK, Liviu MIRCEA, Tiberiu OPROIU
Romanian Academy, Cluj-Napoca Branch, Astronomical Observatory, Cluj-Napoca, Romania
> ***Two-site optical observation of earth satellites at Astronomical Observatory of Cluj-Napoca***