

CELMEC VI

San Martino al Cimino (Viterbo)

MONDAY 2 SEPTEMBER 2013

- 9.00-9.20 **OPENING**
- 9.20-10.00 **S. Ferraz-Mello:** *Tidal perturbations of the rotation of the Moon. The creep tide approach*
- 10.00-10:20 **R. Dvorak:** *New results on the three-Trojan problem*
- 10.20-10.40 **J. Waldvogel:** *Regularization of the symmetric four-body problem by elliptic functions*
- 10.40-11.00 **N. Haghighipour:** *Effects of Secular Resonances on the Formation of Terrestrial Planets*
- 11.00-11.30 break
- 11.30-11.50 **C. Lhotka:** *On the generalization of Peale's formula*
- 11.50-12.10 **M. Sansottera:** *Lower dimensional elliptic tori in planetary systems via normal form*
- 12.10-12.50 **J. Fejoz:** *Remarks on KAM theory*
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- 14.30-15.10 **S. Terracini:** *Symbolic Dynamics for the N-centre problem at negative energies*
- 15.10-15.30 **G. Pucacco:** *Geometric analysis of bifurcations in symmetric resonances*
- 15.30-15.50 **A. Marchesiello:** *Bifurcations in Hamiltonian systems around symmetric resonances*
- 15.50-16.10 **M. El Moutamid:** *Study of mean motion resonances in the Elliptical Three Body Problem*
- 16.10-16.40 break
- 16.40-17.00 **C. Efthymiopoulos:** *Analytical invariant manifolds and the convergence of the hyperbolic normal form*
- 17.00-17.20 **E. Pitjeva:** *Numerical ephemerides of planets and their natural satellites of IAA RAS and their using for scientific research*
- 17.20-18.00 **U. Locatelli:** *Sitnikov problem revisited: a new KAM approach based on the MacMillan integrable approximation*

TUESDAY 3 SEPTEMBER 2013

- 9.00-9.40 **F. Diacu:** *The N-body problem in spaces of constant curvature*
- 9.40-10.00 **P. Sousa-Silva:** *Practical Stability Boundaries around L4,5 in the spatial R3BP*
- 10.00-10.20 **G. B. Valsecchi:** *A numerical exploration of periodic orbits close to that of the Moon*
- 10.20-10.40 **A. Majorana:** *Numerical solutions of gravitational Boltzmann-Poisson model for asteroids or planetary rings.*
- 10.40-11.10 break
- 11.10-12.40 **POSTER PRESENTATION**
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- 14.30-15.10 **A. Lemaitre:** *The shadowing effects in the long term dynamic of space debris*
- 15.10-15.30 **G. Voyatzis:** *Vertical instability and excitation of inclination during planetary migration*
- 15.30-15.50 **C. Gales:** *A cartographic study of satellite and space debris dynamics*
- 15.50-16.10 **F. Deleflie:** *Long term stability of MEO and GTO-like orbits in the Earth environment*
- 16.10-16.40 break
- 16.40-17.00 **Z. Knezevic:** *A New Approach to Classification of Asteroids into Families*
- 17.00-17.20 **M. Suvakov:** *Slaloms: A Special Order of Periodic Solutions to the Three-body Problem*
- 17.20-17.40 **A. M. Cherubini:** *A dynamical systems approach to detect early-warnings of transition to desertification in fragile eco-systems including habitable exoplanets*

Evening: Exhibition downtown "Macchina di Santa Rosa"

WEDNESDAY 4 SEPTEMBER

- 9.00-9.40 **D. Hestroffer:** *Science of Solar System Objects with Gaia*
- 9.40-10.00 **A. Farres Basiana:** *Low-Thrust minimum time Earth-Moon transfer*
- 10.00-10.20 **P. Teofilatto:** *Homoclinic and Heteroclinic Connections through Isomorphic Mapping*
- 10.20-10.40 **I. Kosenko:** *Dynamics of a Spacecraft Tethered to the Primary in the Restricted Elliptic Three-Body Problem*
- 10.40-11.10 break
- 11.10-11.30 **S. Di Ruzza:** *Determination of the rotation state of Mercury by the on-board camera in the BepiColombo mission*
- 11.30-11.50 **W. van der Weg:** *Earth-Sun L1 and L2 to Moon transfers exploiting natural dynamics*
- 11.50-12.10 **E. M. Alessi:** *The geometry of impacts on a synchronous planetary satellite*
- 12.10-12.50 **S. Campagnola:** *Resonant hopping and space mission design*
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- 14.30-15.10 **B. Conway:** *How Evolutionary and Heuristic Methods are Greatly Improving Spacecraft Trajectory Optimization*
- 15.10-15.30 **A. Di Salvo:** *Local time of node selection criteria for optical satellites in Sun-Synchronous Orbits*
- 15.30-15.50 **M. Ceccaroni:** *Double averaging method for frozen orbits around an inhomogeneous body*
- 15.50-16.10 **M. Duering:** *Manoeuvring strategies for quasi-periodic trajectories*
- 16.10-16.30 **G. Mingotti:** *Combined Invariant Manifolds and Low-Thrust Propulsion Trajectories to Capture Asteroids*
- 16.30-17.00 break
- 17.00-17.20 **Z. Mako:** *Some statistical properties of Weak Stability Boundary*
- 17.20-17.40 **E. Iorfida:** *Modelling mid-course correction of interplanetary trajectory*
- 17.40-18.00 **M. Giancotti:** *Families of Periodic Orbits in Hill's Problem with Solar Radiation Pressure*
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- 20:00 **Social dinner**

THURSDAY 5 SEPTEMBER

- 9.00-9.40 **L. Chierchia:** *A theorem on (all) the spin-orbit resonances of the Solar system*
- 9.40-10.00 **W. Sweatman:** *Orbits near equal-mass four-body central configurations*
- 10.00-10.20 **E. Haus:** *Asymptotic behavior of an elastic satellite with internal friction*
- 10.20-10.40 **M. Galiazzo:** *V-types asteroids: impacts and close encounter with Terrestrial Planets*
- 10.40-11.10 break
- 11.10-11.30 **F. Bernardi/L. Cibin:** *SST-Fly-Eye. Fly Eye telescope and Advanced Orbit Determination asset: a product synergy between hardware and software for the SSA program*
- 11.30-11.50 **D. Souami:** *Testing the universality of a law for the spacing of planetary systems*
- 11.50-12.10 **A. S. Libert:** *Extension of the Laplace-Lagrange theory for the secular evolution of extrasolar systems*
- 12.10-12.50 **G. Fusco:** *Platonic polyhedra and chaotic motion in the N-body problem in the case of strong force*
- 14.30-15.10 **A. Albouy:** *Two quadratic conserved quantities*
- 15.10-15.30 **L. Biasco:** *Analytic estimates and topological properties of the weak stability boundary*
- 15.30-15.50 **J. B. Delisle:** *Dissipation in planar resonant planetary systems*
- 15.50-16.20 break
- 16.20-16.40 **A. Rosaev:** *Stability of binary system on highly eccentric orbit*
- 16.40-17.00 **J. Galan Vioque:** *Symmetric horseshoe orbits in the general planar five-body problem*
- 17.00-17.20 **C. Colombo:** *Coupled attitude and orbit dynamics for asteroid manipulation through laser ablation*
- 17.20-17.40 **S. Eggl:** *The NEOShield project: a comprehensive approach to asteroid mitigation*
- 17.40-18.00 **K. Kholshevnikov:** *How precise is the epicyclic theory of planetary motion?*
- 18:30 **Soccer game**

FRIDAY 6 SEPTEMBER

- 9.00-9.40 **J. Laskar:** *Long time integrations of the Solar System*
- 9.40-10.00 **F. Roig:** *Transport of V-type asteroids from the Vesta family*
- 10.00-10.20 **E. Pilat-Lohinger:** *Solar system analogs and the habitability of the Earth*
- 10.20-10.40 **L.-Y. Zhou:** *Co-orbital motion in the outer solar system*
- 10.40-11.10 break
- 11.10-11.30 **V. Carruba:** *A multi-domain approach to asteroid family identification*
- 11.30-11.50 **F. Spoto:** *Shadowing Lemma and Chaotic Orbit Determination*
- 11.50-12.10 **E. Verheylewegen:** *Secular Resonances in Mean Motion Commensurabilities for the internal Uranian satellites*
- 12.10-12.50 **A. Rossi:** *Collision risk and disposal strategies for Global Navigation Satellite Systems*
- 14.30-15.10 **A. Milani:** *Predictions for Chaotic Dynamics: 15 years of Impact Monitoring*
- 15.10-15.30 **A. Batkhin:** *Families of symmetric periodic solutions of a generalized Hill's problem*
- 15.30-15.50 **G. Bau':** *Efficient orbit computation using new time-elements*
- 15.50-16.10 **D. Farnocchia:** *The strange case of asteroid (3908) Nyx*
- 16.10-16.40 break
- 16.40-17.00 **D. Serra:** *A semi-analytic theory to estimate the uncertainty of a space mission Gravity Science experiment*
- 17.00-17.20 **G. Boue':** *Evolution of compact multiplanet systems with a wide companion*
- 17.20-18.00 **A. Chenciner:** *Angular momentum in higher dimensions and Horn's problem*
- 19:00 **Prize ceremony**