"Understanding the Earth core and nutation."
Programme

Brussels, September 2016

Monday, 19 September 2016

13:00 Registration desk open

13:00 Cakes

14:00 Introduction Word

Monday Afternoon (part 1)

Chair: Jan Vondrák

14:10 Drilling the Earth down to the core with VLBI. - **Invited**
Sebastien Lambert, Cesar Gattano
SYRTE, Observatoire de Paris, PSL Research University, CNRS, Sorbonne Universités, UPMC Univ. Paris 06, LNE

14:40 Evolution of the VLBI EOP precision and accuracy over the past 37 years.
Zinovy Malkin
Pulkovo Observatory

15:00 SOFA & IAU Standards. - **Invited**
Catherine Hohenkerk
HM Nautical Almanac Office, UK Hydrographic Office

15:30-15:50 Posters and Coffee break

Monday Afternoon (part 2)

Chair: Catherine Hohenherk

15:50 30 years in the concept and use of the non-rotating origin. - **Invited**
Nicole Capitaine
SYRTE, Observatoire de Paris, France

16:20 Thirty years in the theory of nutation – A tribute to Journées ”Systèmes de référence spatio-temporels”. - **Invited**
Chengli Huang[1], Alberto Escapa[2], and Jean Souchay[3]
[1]Shanghai Astronomical Observatory, Chinese Academy of Sciences, China; [2]Dept. Aerospace Engineering, University of León, Spain; [3]SYRTE, Observatoire de Paris, France

16:50 The ”Journées” - A unique international forum for discussion on space and time reference systems. - **Invited**
Yaroslav Yatskiv[1], Nicole Capitaine[2]
[1]Main Astronomical Observatory of the NAS of Ukraine; [2]Paris Observatory, SYRTE, France

17:20 Nicole Capitaine, a dedicated career.
Veronique Dehant
Royal Observatory of Belgium

17:40-18:00 Discussion

19:00 Reception

Tuesday, 20 September 2016

Tuesday Morning (part 1)

Chair: Aleksander Brzezinski

09:00 The Free Rotational Modes of the Earth: A Review. - **Invited**
Richard Gross
Jet Propulsion Laboratory, California Institute of Technology, Pasadena, USA

09:30 New method of computing parameters of Free Core Nutation.
Jan Vondrák, Cyril Ron
Astronomical Institute, Czech Academy of Sciences, Prague

09:50 How much FCN model depends on the underlying CPO series?
Zinovy Malkin
Pulkovo Observatory

10:10-10:30 Coffee break

Tuesday Morning (part 2)

Chair: Richard Gross

10:30 Recent advances in modeling and observation of polar motion at daily and subdaily periods: an overview - **Invited**
Aleksander Brzezinski[1,2]
[1]Warsaw University of Technology, Department of Geodesy and Cartography, [2]Space Research Centre of the Polish Academy of Sciences, Warsaw

11:00 Polar Motion Excitation From CMIP5 Climate Models And Earth's Gravity Field Variations.
Jolanta Nastula[1], Malgorzata Wińsks[2]
[1]Space Research Centre, Polish Academy of Sciences, Poland; [2]Warsaw University of Technology, Poland

11:20 Coupling Constant at CMB and ICB as estimated from VLBI observations.
Ping Zhu, Attilio Rivoldini, Antony Trinh, Raphael Laguerre, Jeremy Rekier, Andres Santiago, Tim Van Hoolst, Veronique Dehant
Royal Observatory of Belgium

11:40-12:00 Discussion

12:00-14:00 Lunch

Tuesday Afternoon (part 1)

Chair: Jeremy Rekier

14:00 Forced Nutations and the Strength of Earth's Internal Magnetic Field. - **Invited**
Bruce Buffett
University of California, Berkeley

14:30 Probing Earth's Core Structure with Geomagnetic and Length-of-Day Variation. - **Invited**
Nicholas Knezek, Bruce Buffett
Department of Earth and Planetary Science, U.C. Berkeley

15:00 Earth's angular momentum variation from numerical geodynamo simulation: towards assimilation of the observed EOP variation. - **Invited**
Weijia Kuang
Planetary Geodynamics Laboratory, NASA Goddard Space Flight Center

15:30-15:50 Coffee break

Tuesday Afternoon (part 2)

Chair: Ping Zhu

15:50 Body tides and surface loading of a rotating and laterally heterogeneous Earth model. - **Invited**
Jun-Yi Guo
School of Earth Sciences, The Ohio-State University

16:20 Nutations and librations of non-hydrostatic planets and moons
Antony Trinh
Royal Observatory of Belgium

16:40 A mechanism that would make the frequency of a rotational mode double or multiple. - **Invited**
Yves Rogister[1], Bernard Valette[2]
[1]Ecole et Observatoire des Sciences de la Terre, Université de Strasbourg, France; [2]Institut des Sciences de la Terre, Chambéry, France

17:10 Coupling planetary rotation to internal fluid layer dynamics
Jeremy Rekier, Santiago A. Triana, Antony Trinh, Raphaël Laguerre, Ping Zhu, Véronique Dehant
Royal Observatory of Belgium

17:30-17:50 Discussion

19:00 Dinner
"Au repos de la montagne" @ Montagne de Saint-Job, 39 - 1180 Brussels

Wednesday, 21 September 2016

Wednesday Morning (part 1)

Chair: Raphael Laguerre

09:00 Precession, magnetic induction, and acoustic modal velocimetry in the laboratory. - **Invited**
Daniel Lathrop
IREAP and IPST, University of Maryland

09:30 Inertial modes in a differentially rotating spherical shell.
Santiago Triana[1], Ankit Barit[2], Raphael Laguerre[1], Johannes Wicht[2]
[1]Royal Observatory of Belgium; [2]Max Planck Institute for Solar System Research

09:50 Tides and libration driven elliptical instabilities in planetary cores: non-linear saturation and dynamo action. - **Invited**
Thomas Le Reun, Benjamin Favier, Michael Le Bars
CNRS, Aix-Marseille Univ, Centrale Marseille - IRPHE UMR 7342 - Marseille, France

10:20 Elliptical instability in stably stratified fluid interiors.
Jérémie Vidal[1], Rainer Hollerbach[2], Nathanaël Schaeffer[1], David Cébron[1]
[1]Université Grenoble Alpes, CNRS, ISTerre, Grenoble, France; [2]School of Mathematics, University of Leeds, Leeds, LS2 9JT, UK

10:40-11:00 Coffee break

Wednesday Morning (part 2)

Chair: Santiago Andres Triana

11:00 Precession driven instabilities in the lunar core and the large dissipation at 18.6 yrs. - **Invited**
Dr. Jerome Noir
Institut fur Geophysik

11:30 Mechanically-driven flows in ellipsoids. Applications to precession & nutations. - **Invited**
David Cebron, Jeremie Vidal, Nathanael Schaeffer
ISTerre, Grenoble, France

12:00 Instability of precession in an ellipsoid.
Clément Nobili, Patrice Meunier, Michael Le Bars
IRPHE

12:20 Flow driven in the outer core of a precessing planet with an inner core
Raphaël Laguerre[1], Jérôme Noir[2], Nathanaël Schaeffer[3], David Cébron[3], Véronique Dehant[1]
[1]Royal Observatory of Belgium; [2]Institut fur Geophysik; [3]ISTerre, Grenoble, France

12:40-13:00 Discussion

13:00-14:00 Cakes