



*Scientific developments from  
highly accurate space-time  
reference systems*

## PROGRAMME

*Observatoire de Paris  
Ecole Normale Supérieure*

**16-18 September 2013**

## **Monday 16 September 2013**

(at ENS: amphitheatre Dussane)

### **9:15-9:30: Opening of the Journées 2013**

Welcome from N. Dimarcq, Director of Department SYRTE of Paris Observatory, Chair of the LOC

Introduction to the Journées 2013 by N. Capitaine, Chair of the SOC

### **9:30-11:00: Session 2 - The Next ICRF - Progress and developments**

(Chair: J. Souchay, J. Vondrák)

Jacobs C. & ICRF-3 WG (**invited**): *Proposed Roadmap for the ICRF-3*

Mignard F. (**invited**): *Gaia status and early mission*

Bertarini A., Horiuchi S., Jacobs C., Jung T., Lovel J., McCallum J., Ojha R., Quick J., Sohn B.W., de Witt A.: *Extending the K-band Celestial Frame with Emphasis on the Southern Hemisphere*

Krasna H., Malkin Z., Böhm J.: *Impact of seasonal station displacement models on radio source positions*

Malkin Z.: *On systematic and random errors of radio source position catalogs*

Zharov V., Shmeleva N.V.: *Analysis of time series of the EOP and the ICRF source coordinates*

### **11:00-11:30: Coffee-break**

### **11:30-13:00: Session 2 - (continuation)**

(Chair: C. Jacobs, Ya. Yatskiv)

Bachmann S., Engelhardt G., Thaller D.: *Source positions from VLBI combined solution*

Iddink A., Nothnagel A., Artz T.: *Development of a VLBI Intra-Technique Combination Strategy for CRF Determination*

Andrei H., Antón S., Taris F., Bourda G., Souchay J., Bouquillon J., Barache C., Pereira Osorio J.J., Charlot P., Vieira Martins R., Lambert S., Camargo J.I., da Silva Neto D.N., Assafin M., le Campion J.-F.: *The Gaia Initial Quasar Catalog*

Souchay J., Andrei A., Barache C., Taris F., Bouquillon S., Gattano C.: *The update of Large Quasar Astrometric Catalog*

Damjanovic G., Taris F., Boeva S., Latev G.: *Optical data of ERS made at 60 cm ASV and 2m Rozhen telescopes useful for the link of ICRF-future Gaia CRF*

### **Discussion**

### **13:00-14:00: Lunch break**

### **14:00-16:00: Session 1 - Theoretical aspects of reference systems**

(Chair: N. Capitaine, M. Soffel)

Métivier L., Collilieux X., Altamimi Z., Lercier D. (**invited**): *The ITRF and its scientific applications*

Soffel M., Klioner S., Zschocke S. (**invited**): *Relativistic astrometry: status and prospects*

Fedorova E., Alexandrov A.N., Zhdanov V.I.: *Optical coordinate system for a local observer in a weak gravitational field*

Bertone S., Le Poncin-Lafitte C., Crosta M., Vecchiato A.: *Latest advances in an astrometric model based on the Time Transfer Functions formalism*

Girdiuk A., Titov O.: *Plans for VLBI observations of close approaches of Jupiter to compact extragalactic radio sources in 2014-2016*

Teysandier P., Linet B.: *Enhanced term of order  $G^3/c^6$  in the light travel time*

Roland J.: *Binary black holes in nuclei of extragalactic radio sources*

Liu J.-C., Xie Y., Zhu Z.: *Aberration in proper motions for stars in our Galaxy*

### **16:00-16:15: Coffee-break**

### **16:15-18:00: POSTER SESSION**

### **18:00-19:30: Welcome drink**

## **Tuesday 17 September 2013**

(at ENS: amphitheatre Dussane)

### **9:00-10:30: Session 3 - Atomic and pulsar-based timescales - Progress and developments**

(Chair: D.D. McCarthy, G. Petit)

Defraigne P. **(invited)**: *Multi-GNSS time and frequency transfer*

Hobbs G. **(invited)**: *A pulsar-based time scale from the International Pulsar Timing Array*

Petit G.: *Atomic time scales*

Pottié P.-E., Lopez O., Kanj A., Rovera D., Aschkar J., Chardonnet Ch., Amy-Klein A., Santarelli G.: *Time and frequency comparisons with optical fiber links*

Guo L., Zhao M., Li L.: *Some astrometric discussions on the pulsar parameters by timing*

#### **Discussion**

### **10:30-11:00: Coffee-break**

### **11:00-13:00: Session 4a - Earth Rotation - Theory**

(Chair: V. Dehant, C. Huang)

Ferrándiz J., Gross R. **(invited)**: *The goal of the IAU/IAG Joint Working Group on the Theory of Earth rotation*

Dehant V., Folgueira M., Puica M., Koot L., Van Hoolst T., Trinh A.: *Next step in Earth interior modeling for nutation*

Escapa A., Getino J., Ferrándiz J.M., Baenas T.: *On the changes of IAU 2000 nutation theory stemming from IAU 2006 precession theory*

Filippova A., Markov Y., Rykhlova L.: *Rotational-oscillatory motion of the deformable Earth in the short time intervals*

Huang C., Liu C., Liu Y.: *A generalized theory of the figure of the Earth: application to the moment of inertia and global dynamical flattening*

Pashkevich V.: *Construction of the new high-precision Earth rotation series at a long time interval*

Ron, C., Vondrák J., Chapanov Y.: *Free core nutation - possible causes of changes of its phase and amplitude*

Zotov L., Bizouard C.: *Study of the prograde and retrograde excitation at the Chandler frequency*

### **13:00-14:00: Lunch break**

### **14:00-16:15: Session 4b - Earth Rotation - Modelling and observations**

(Chair: A. Brzeziński, R. Gross)

Thaller D. **(invited)**: *The IERS Retreat: How to improve Earth Rotation products?*

Bizouard C.: *Comparison of geodetic and modeled excitation functions by Allan variance*

Boehm J., Schindelegger M., Salstein D.: *Analysis of atmosphere-excited intraseasonal polar motion via the torque approach*

Brzeziński A., Rajner M.: *Estimation of the Chandler wobble parameters by the use of the Kalman deconvolution filter*

Chapanov Y., Vondrák J., Ron C., Pachalieva R.: *Natural and systematic polar motion jumps*

Ding H., Shen W.-B.: *Observation of a 531-day-period polar motion*

Capitaine N., Yao K.: *Nutation determination by means of GNSS - Comparison with VLBI*

Lambert S., Capitaine N., Rosat S., Souchay J.: *The Earth's nutation: VLBI vs. IAU 2000A*

Nastula Y.: *Gravimetric excitation function of polar motion from the GRACE RL05 solution*

Xu X., Zhou Y., Liao X.: *Researches on predictions of Earth orientation parameters*

Yatskiv Y., Odynets P., Volvach O.: *The "Simeiz-Katsiveli" co-location site of space geodesy techniques: current state and future activity*

### **16:15-16:45: Coffee-break**

### **16:45-17:30: Discussion**

### **19:30-22:30: Conference dinner**

## **Wednesday 18 September 2013**

(at ENS: amphitheatre Dussane)

### **9:00-11:00: Session 5 – Solar System Dynamics - Theory, modelling and numerical standards**

(Chair: A. Escapa, C. Hohenkerk)

Wieczorek M., M.T. Zuber (**invited**): *New results from NASA's lunar gravity mapping mission GRAIL*

Rambaux N. (**invited**): *Rotation/libration of solar system bodies*

Hees A., Folkner W., Park R., Jacobson R., Lamine B., Le Poncin-Lafitte C., Wolf P.: *Tests of gravitation at Solar System scale beyond PPN formalism*

Pitjeva E., Kosmodamianskiy G., Pavlov D., Pitjev N., Poroshina A., Skripnichenko V.: *Numerical ephemerides of planets (EPM) and natural satellites of IAA RAS and their uses for scientific research*

Fienga A., Verma, A.K., Laskar, J., Manche, H., Gastineau, G.: *INPOP13*

Kudryavtsev S.: *Approximation of orbital elements of telluric planets by compact analytical series*

Yagudina E., Vasiliev M.: *EPM-ERA 2013 - New Version of Lunar ephemeris Developed in IAA RAS*

Hestroffer D., Berthier J., Carry B., David P., Thuillot W., Arlot J-E., Bancelin D., Colas F., Devillepoix H., Fouchard M., Ivantsov A., Lainey V., Rambaux N., Robert V.: *Solar System dynamics with the Gaia mission and beyond*

### **11:00-11:30: Coffee-break**

### **11:30-12:30: Discussion**

### **12:30-12:45: Closing of the Journées 2013**

and Announcement of the Journées 2014

### **13:00-14:00: Lunch break**

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## **Wednesday 18 September 2013**

at Observatoire de Paris

**14:00-17:30: WG and task group meetings (Meeting rooms of Paris Observatory)**

**16:00-17:00: Possibility of a visit of the exhibition *Lacaille* at Paris Observatory**

or, in Paris

**14:30-17:00: Possibility of a touristic visit**