

Dr. BENOÎT NOYELLES
FNRS Post-doctoral fellow in celestial mechanics

University of Namur
Departement of Mathematics
Rempart de la Vierge 8
B-5000 NAMUR
BELGIUM
phone : +32 81 72 49 40
e-mail : benoit.noyelles@fundp.ac.be
homepage : <http://www.imcce.fr/~noyelles/>

AAS Member (DDA / DPS)

Personal Background

Age 33 years old

Nationality French

Family Status Single

Present employment

FRS-FNRS Post-doctoral Research Fellow (Belgian Research Agency)

Education

2002-2005 PhD candidate at the Institut de Mécanique Céleste et de Calcul des Ephémérides (Paris and Lille), depending of Paris Observatory. Advisors: Dr. Alain VIENNE and Dr. William THUILLOT

Ph.D obtained on December, 13th 2005 with highest honours

2002 Master Degree in Astronomy at Observatoire de Paris

2001 Master Degree in Telecommunications at the University of Valenciennes (France)

2001 Master Degree of « Ecole Centrale de Lille » (Top tier engineering school, France)

Languages

French Native speaker

English Fluent

German Fluent, Zentrale Mittelstufe Prüfung (Goethe Institut) obtained in 1999

Italian Average

Spanish Average

Research Interests

solar system dynamics, dynamical planetology, tidal effects, astrometry, rotation, chaos

Research Experience

January 2009 : visiting researcher at the University of Roma 2 – Tor Vergata (Italy)

since 2006 : post-doctoral fellow at the University of Namur (Belgium), working on the preparation of the ESA space mission Bepi-Colombo to Mercury (2007-2010)

March-June 2006 : visiting scholar at Jinan University (Guangzhou, PR China)

2005-2006 : Lecturer at the University of Lille (Lille I)

2002-2005 : PhD candidate at IMCCE on the long-term evolution of orbits of natural satellites of Jupiter and Saturn

2000 : 3 months at Bordeaux Observatory (France), reducing and interpreting ISOCAM data on proto-stars

Teaching Experience

since 2008 : Teaching of Fluid mechanics, theory of resonances and qualitative theory of dynamical systems at the University of Namur (Belgium)

from October 2005 to March 2006 : 96 hours of teaching of Mathematics and Astronomy at the University of Lille 1

spring 2005 : 27 hours of teaching of Electrical Engineering at the « Ecole Centrale de Lille »

2004 : 12 hours of teaching of Mathematics at the University of Lille 1

2003 : 8 hours of teaching of Mathematics at the « Ecole Centrale de Lille »

Refereed Journal Articles

18. **Noyelles B.**, 2012, « Behavior of nearby synchronous rotation of a Poincaré-Hough satellite at low eccentricity », *Celestial Mechanics and Dynamical Astronomy*, in press

17. Arridge C.S. et al. (79 authors), 2012, « Uranus Pathfinder: Exploring the origins and evolution of ice giant planets », *Experimental Astronomy*, in press

16. **Noyelles B.** and D'Hoedt S., 2012, « Modeling the obliquity of Mercury », *Planetary and Space Science*, 60, 274-286
15. **Noyelles B.**, Karatekin Ö. & Rambaux N., 2011, « The rotation of Mimas », *Astronomy and Astrophysics*, 536, A61
14. **Noyelles B.**, Dufey J. and Lemaître A., 2010, « Core-mantle interactions for Mercury », *The Monthly Notices of the Royal Astronomical Society*, 407, 479-496
13. D'Hoedt S., **Noyelles B.**, Dufey J. and Lemaître A., 2010, « A secondary resonance in Mercury's rotation », *Celestial Mechanics and Dynamical Astronomy*, 107, 93-100
12. **Noyelles B.**, 2010, « Theory of the rotation of Janus and Epimetheus », *Icarus*, 207, 887-902
11. Dufey J., **Noyelles B.**, Rambaux N. and Lemaître A., 2009, « Latitudinal librations of Mercury with a fluid core », *Icarus*, 203, 1-12
10. D'Hoedt S., **Noyelles B.**, Dufey J. and Lemaître A., 2009, « Determination of an instantaneous Laplace plane for Mercury's rotation », *Advances in Space Research*, 44, 597-603
9. **Noyelles B.**, 2009, « Expression of the third Cassini Law for Callisto, and theory of its rotation », *Icarus*, 202, 225-239
8. Arlot J.-E. et al. (118 authors), 2009, « The PHEMU03 catalogue of observations of the mutual phenomena of the Galilean satellites of Jupiter », *Astronomy and Astrophysics*, 493, 1171-1182
7. **Noyelles B.**, 2008, « Titan's rotational state: the effects of a forced « free » resonant wobble », *Celestial Mechanics and Dynamical Astronomy*, 101, 13-30
6. **Noyelles B.**, Lemaître A. and Vienne A., 2008, « Titan's rotation: A 3-dimensional theory », *Astronomy and Astrophysics*, 478, 959-970
5. Peng Q.Y., Vienne A., Lainey V. & **Noyelles B.**, 2008, « New evidence of precision premium for Galilean satellites from CCD imaging », *Planetary and Space Science*, 56, 1807-1811
4. **Noyelles B.** and Vienne A., 2007, « Chaos induced by De Haerdtl inequality in the Galilean system », *Icarus*, 190, 594-607
3. Peng Q.Y. and **Noyelles B.**, 2007, « Eclipses and Occultations of Galilean satellites observed in 2003 at Yunnan Observatory », *The Chinese Journal of Astronomy and Astrophysics*, 7, 317-324
2. Vienne A., **Noyelles B.** and Amossé A., 2003, « Observation of 13 mutual events of Jovian satellites performed at Lille Observatory », *Astronomy & Astrophysics*, 410, 343-347

1. **Noyelles B.**, Vienne A. and Descamps P., 2003, « Astrometric reduction of lightcurves observed during the PHESAT95 campaign », *Astronomy & Astrophysics*, 401, 1159-1175

International Conferences

Noyelles B., 2011, «The Poincaré model of rotation for the synchronous satellites », DPS-EPSC Joint Meeting, Nantes, France

Noyelles B., Karatekin Ö. & Rambaux N., 2011, « Rotational signature of Mimas' interior », DPS-EPSC Joint Meeting, Nantes, France

Delsate N., Noyelles B. & Carletti T., 2011, «NAFFO: A numerical algorithm to simulate the damped rotation of synchronous satellites"», DPS-EPSC Joint Meeting, Nantes, France

Verheylewegen E. & Noyelles B., 2011, « Orbital evolution of the main Uranian satellites », DPS-EPSC Joint Meeting, Nantes, France

Noyelles B., 2011, « Theory of the rotation of Janus and Epimetheus », EGU General Assembly, Vienna, Austria (solicited contribution)

Noyelles B., Dufey J. & Lemaître A., 2011, « Modeling the rotation of Mercury including pressure coupling », EGU General Assembly, Vienna, Austria

Noyelles B., Dufey J. & Lemaître A., 2010, « Effect of pressure coupling on the rotation of Mercury », 42nd Meeting of the Division of Planetary Sciences (American Astronomical Society), Pasadena, CA, USA

Noyelles B., Dufey J. & Lemaître A., 2010, « Influence of the core-mantle interactions on the rotation of Mercury », 41st meeting of the Division of Dynamical Astronomy (American Astronomical Society), Boston, MA, USA

Noyelles B., 2010, « Theory of the rotation of Janus and Epimetheus », 41st meeting of the Division of Dynamical Astronomy (American Astronomical Society), Boston, USA

Noyelles B., 2009, « Theory of the rotation of Titan », CELMEC V, San Martino al Cimino, Italy (invited contribution)

Dufey J., Noyelles B. and Lemaître A., 2009, « Mercury's rotation: Various models and planetary perturbations », CELMEC V, San Martino al Cimino, Italy

D'Hoedt S., Noyelles B., Dufey J. and Lemaître A., 2009, « A secondary resonance in Mercury's rotation », CELMEC V, San Martino al Cimino, Italy

Noyelles B. and Lemaître A., 2009, « Cassini's third law for Callisto and theory of its rotation », IAU Symposium 263 « Icy bodies in the Solar System », Rio de Janeiro, Brasil

Henrard J., Lemaître A. and Noyelles B., 2009, « The rotation of Io with a liquid core », IAU Symposium 263 « Icy bodies in the Solar System », Rio de Janeiro, Brasil

Noyelles B., Lemaître A. and Vienne A., 2009, « Theory of the rotation of Titan », IAU Symposium 263 « Icy bodies in the Solar System », Rio de Janeiro, Brasil

D'Hoedt S., Noyelles B., Dufey J. and Lemaître A., « Analytical theory of Mercury's rotation and references planes », 37th COSPAR Meeting, Montreal, Canada

Dufey J., Lemaître A., Noyelles B. & Rambaux N., 2008, « Planetary perturbations on the rotation of Mercury », International Conference on the Dynamics of Celestial Bodies, Lithoro, Greece

Noyelles B., Dufey J. & Lemaître A., 2008, « Short period contribution in the rotation of Mercury », 39th Meeting of the Division of Dynamical Astronomy (American Astronomical Society), Boulder, CO, USA

Noyelles B., Lemaître A. & Vienne A., 2008, « The 3-dimensional rotation of Titan, and the possibility of a resonant wobble », 39th Meeting of the Division of Dynamical Astronomy (American Astronomical Society), Boulder, CO, USA

Lainey V., Desmars J., Arlot J.-E., Karatekin O., Noyelles B. & Vienne A., 2007, « First steps toward an accurate quantification of the Saturnian tidal dissipation », American Geophysical Union Fall Meeting, San Francisco, CA, USA

Noyelles B., Lemaître A. & Vienne A., 2007, « Titan's rotation: A 3-degree of freedom theory », European Planetary Science Congress, Potsdam, Germany

Noyelles B., 2006, « Astrometric results of the PHESAT95 campaign », Paris 2006 Meeting "Mutual events of the Uranian satellites in 2007 - 2008 and future observations in network, Paris, France

Dourneau G. & Noyelles B., 2006, « The Phemu03 campaign of observation of the mutual events of the Galilean satellites of Jupiter in 2003 at the Bordeaux Observatory », Paris 2006 Meeting "Mutual events of the Uranian satellites in 2007 - 2008 and future observations in network, Paris, France

Peng Q.Y., Vienne A., Lainey V., Noyelles B. & Li Z.L., 2006, « Experiment in precise positional measurement of Galilean satellites from CCD imaging », Paris 2006 Meeting "Mutual events of the Uranian satellites in 2007 - 2008 and future observations in network, Paris, France

Noyelles B. & Vienne A., 2006, « Dynamical exploration of De Haerdtl inequality between Ganymede and Callisto », 37th meeting of the Division of Dynamical Astronomy (American Astronomical Society), Halifax, Canada (BAAS 38)

Noyelles B. and Vienne A., 2005, « Stochastic behaviour around the 3:7 inequality between Ganymede and Callisto », CELMEC IV, San Martino al Cimino, Italy

Noyelles B. and Vienne A., 2005, « Dynamical history of Ganymede and Callisto », 2005 DPS meeting, Cambridge, UK, Bulletin of the American Astronomical Society Vol. 37, p.753

Noyelles B. and Vienne A., 2004, « The $k:k+4$ resonances in planetary systems » in « Dynamics of Populations of Planetary Systems », proceedings of the IAU Colloquium 197, ed. Z. Knezevic and A. Milani, Cambridge University Press, p.453

Noyelles B., Lainey V. and Vienne A., 2004, « Observation and reduction of mutual events in the Solar System », IAU Colloquium 196 « Transit of Venus: New views of the Solar System and Galaxy », proceedings of the IAU Colloquium 196, ed. D. W. Kurtz, Cambridge University Press, p.271