

## Curriculum vitae

### Personal information :

Name : **Christoph Heinrich LHOTKA**  
 Title : Magister rerum naturalium (Universität Wien **14/12/2004**)  
 Doktor rerum naturalium (Universität Wien **18/02/2009**)  
 Birth : 1978 in Vienna  
 Citizenship : Austria  
 Marital status : Married, 1 child

### Habilitation :

Duration : **17/10/2014 → 17/10/2020**  
 Type : **Professore di II fascia in Fisica Matematica (Mathematical Physics)**  
 Authority : Abilitazione Scientifica Nazionale 2013  
<https://asn.cineca.it/ministero.php/public/esitoAbilitati/settore/01%252FA4/fascia/2>

### Contact details :

Office : Space Research Institute, Austrian Academy of Sciences  
 Schmiedlstrasse 6, 8042 Graz  
 Phone : +43.316.4120.714  
 Email : [christoph.lhotka@oeaw.ac.at](mailto:christoph.lhotka@oeaw.ac.at)  
 Home : 1190 Vienna, Austria

### Scientific job experience :

11 / 2014 – now (60 months) **PostDoc Scientist**, *Österreichische Akademie der Wissenschaften, Institut für Weltraumforschung*, Graz, Austria [Baumjohann].  
 01 / 2014 – 06 / 2014 (6 months) **PostDoc Scientist**, *Universität Wien, Institut für Astronomie*, Wien, Vienna, “Dissipative normal forms”, FWF J-3206 [Lhotka].  
 01 / 2013 – 12 / 2013 (12 months) **PostDoc Scientist**, *Università degli Studi di Roma Tor Vergata, Dipartimento di Matematica*, Rome, Italy, FWF, J-3206 [Lhotka].  
 07 / 2011 – 12 / 2012 (18 months) **PostDoc Scientist**, *Université de Namur, Département de Mathématique*, Namur, Belgium, BELSPO (Belgian Space Agency) [Lemaître].  
 06 / 2009 – 05 / 2011 (24 months) **PostDoc Scientist**, *Università degli Studi di Roma Tor Vergata, Dipartimento di Matematica*, Rome, Italy, ASI (Italian Space Agency), “Studi di Esplorazione del Sistema Solare” [Celletti].  
 03 / 2009 – 05 / 2009 (3 months) **PostDoc Scientist**, *Universität Wien, Institut für Astronomie*, Vienna, Austria, FWF P-18930 [Dvorak].  
 07 / 2006 – 02 / 2009 **PhD Research Fellow**, *Universität Wien, Institut für Astronomie*, Vienna, Austria,

(32 months) “Effective stability in non-linear dynamical systems”, FWF P-18930 [Dvorak].  
 05 / 2005 – 06 / 2006 **Employee**, *Austria Wirtschaftsservice GmbH*, Vienna, Austria, ideenreich,  
 (14 months) uni:invent [Buchtela, Winter].

### Working stays abroad :

09 - 12 / 2008 **Invited Lecturer**, *Shanghai Normal University 200234, Department of*  
 [3 months] *Mathematics*, Shanghai, China [Maoan Han].  
 11, 12 / 2006; 02, 07, **Invited Researcher**, *Academy of Athens, Research Center for Astronomy and*  
 11, 12 / 2007; 01 / 2009 *Applied Mathematics*, Athens, Greece [Efthymiopoulos].  
 [3 months total]

### Teaching experience :

#### *University of Vienna (Austria) :*

2019 **Lecturer**, “*Dynamics of comets and their interaction with the interplanetary medium*” [6 ECTS].  
**Lecturer**, “*Dynamics from Kepler to Einstein*” [6 ECTS].  
 2018 **Lecturer**, “*Chaos in astrodynamical systems II*” [6 ECTS].  
 2017 **Lecturer**, “*Consolidation module: Chaos in planetary systems (NPI)*” [4 ECTS].  
 2016 **Lecturer**, “*Klassische Astronomie, Himmelsmechanik, Geschichte*” [4 ECTS].  
 2015 **Lecturer**, “*Numerische Methoden der Astronomie*” [5 ECTS].  
 2014 **Lecturer**, “*Chaotic Dynamics*” [4 ECTS].  
**Lecturer**, “*Klassische Astronomie, Himmelsmechanik, Geschichte*” [4 ECTS].  
**Lecturer**, “*Numerische Methoden der Astronomie*” [5 ECTS].  
 2008 **Lecturer**, “*Astronomische Rechenmethoden*” [5 ECTS].

#### *Technical University of Graz (Austria) :*

2018 **Lecturer**, “*Selected Topics B: Stability and Chaos in Celestial Mechanics*” [3 ECTS].  
 2017 **Lecturer**, “*Time Series Analysis and Filtering, VO SES.102, 522.441*” [3 ECTS].  
 2016 **Lecturer**, “*Time Series Analysis and Filtering, UE SES.103, 522.442*” [3 ECTS].

#### *University of Rome Tor Vergata (Italy) :*

2014 **Lecturer** “*Wolfram Mathematica*” in “*Master in Scienza e Tecnologia Spaziale*” [in total 6 hours].  
 2013 **Lecturer**, “*Fisica Matematica 3 – Meccanica Analitica e Celeste*” [in total 10 hours].  
 2011 **Lecturer**, “*Programmazione scientifica*” in “*Master in Scienza e Tecnologia Spaziale*” [in total 4 hours].

#### *University of Namur (Belgium) :*

2012 **Maître de conférences**, “*Applications of dynamical systems - SMAT M225*” [6 ECTS].

#### *Shanghai Normal University (China) :*

2008 **Lecturer**, “*Celestial Mechanics and Exponential Stability*” [in total 16 hours].

### Activities in international meetings :

2019: **SOC Member**, “*Dynamics and Physics of Asteroids*”, Akdeniz Üniversitesi, Antalya, Turkey (04 - 06/09/2019).  
 2019: **Lecturer**, “*Natural Space Risks 2019*”, Paris Observatory (26 - 31/08/2019).  
 2017: **Lecturer**, “*Natural Space Risks 2017*”, Paris Observatory (26/08 - 01/09/2019).  
 2017: **SOC Chair**, “*9th Alexander von Humboldt Colloquium for Celestial Mechanics*”, Hotel Winkler, Bad Hofgastein, Salzburg, Austria (19/03/2017 – 25/03/2017).

2016: **Session Chair**, “*Dust and Solar Wind*” - DPS 48 / EPSC 11 Pasadena, California, USA (16 - 21/10/2016).

2014: **Member of LOC**, “*IAU-Symposium: Complex Planetary Systems*”, Namur, Belgium (07 - 11/07/2014).

2013: **Member of LOC**, “*6th International Meeting on Celestial Mechanics - CELMEC VI*”, Balletti Park Hotel, San Martino al Cimino, Viterbo, Italy (01 - 07/09/2013).

2011: **Member of LOC**, “*8th Alexander von Humboldt Colloquium for Celestial Mechanics*”, Hotel Winkler, Bad Hofgastein, Salzburg, Austria (20 - 26/03/2011).

2009: **Member of LOC**, “*5th International Meeting on Celestial Mechanics - CELMEC V*”, Balletti Park Hotel, San Martino al Cimino, Viterbo, Italy (06 - 12/09/2009).

2008: **Member of LOC**, “*7th Alexander von Humboldt Colloquium for Celestial Mechanics*”, Hotel Winkler, Bad Hofgastein, Salzburg, Austria (30/03/2008 – 05/04/2008).

### **Reviewer activity :**

**Invited Reviewer** in over **10** peer-reviewed journals (over **50** manuscripts so far).

2019 **Outstanding Reviewer Award** from *Celestial Mechanics & Dynamical Astronomy*” - Springer ISSN:0923-2958.

**Reviewer** of project proposals from Belgium, Germany, and Italy.

### **Acquired grants :**

**Project Lead**, FWF P-30542 “Stability of charge and orbit of cosmic dust particles” (310,000 €, 2017/06/26)

**Project Lead**, FWF J-3206 “Dissipative normal forms in the Lagrange problem” (73,585 €, 2011/06/27)

### **Language skills :**

- **German** (mother tongue)      - **English** (excellent)      - **French** (basic)      - **Italian** (basic)

### **Short summary of scientific achievements :**

- **Author** : 1 Wiley textbook (320 pages), 40+ publications (20 first author).

- **Invited Speaker** : 40+ talks at conferences (8 invited).

### **Additional qualifications :**

**Computer IT** : Office (Microsoft, Libre Office), Linux & Windows OS

2006: **Intellectual property management**, “*Proton Europe Vienna Workshop*“, (intellectual property management), ProTon Europe / Austria Wirtschafts Service, Vienna, Austria (11-12/05/2006).

2006: **Intellectual property rights**, “*Rechtsschutz von computerimplementierten Erfindungen in Österreich*“ (intellectual property rights concerning software) - Austria Patent Office, (Fastenbauer, Kögl), Patentamt Wien.

### **www :**

<https://l-sgn.org/>, <https://www.linkedin.com/in/chrlho/>, <http://orcid.org/0000-0002-7552-2941>,  
[https://www.researchgate.net/profile/Christoph\\_Lhotka](https://www.researchgate.net/profile/Christoph_Lhotka), <https://www.iwf.oeaw.ac.at/user-site/christoph-lhotka/>

## Publication list

### A. Books :

[1] Dvorak R., **Lhotka C.**, 2013: “*Celestial Dynamics*”, Wiley ISBN-13: 978-3527409778 (320 pages).

### B. Peer-reviewed papers :

- [31] **Lhotka C.**, Gales C., 2019: “*Charged dust close to outer mean-motion resonances in the heliosphere*”, *Celestial Mechanics & Dynamical Astronomy* (accepted, to be published).
- [30] **Lhotka C.**, Bourdin P., Pilat-Lohinger E., 2019: “*Orbital stability of ensembles of particles in regions of magnetic reconnection in Earth's magneto-tail*”, *Physics of Plasmas* 26, 072903 (11 pages).
- [29] **Lhotka C.**, Narita Y., 2019: “*Kinematic models of the interplanetary magnetic field*”, *Annals of Geophysics* 37, 299-314.
- [28] Souchay J., **Lhotka C.**, Heron G., Hervé Y., Puente V., Folgueira Lopez M., 2018: “*Changes of spin axis and rate of the asteroid (99942) Apophis during the 2029 close encounter with Earth: a constrained model*”, *Astronomy & Astrophysics* 617, A74 (11pages).
- [27] **Lhotka C.**, 2017: “*Steady state obliquity of a rigid body in the spin-orbit resonant problem: application to Mercury*”, *Celestial Mechanics & Dynamical Astronomy* 129, 397-414.
- [26] **Lhotka C.**, Bourdin P., Narita Y., 2016: “*Charged dust grain dynamics subject to solar wind, Poynting-Robertson drag, and the interplanetary magnetic field*”, *The Astrophysical Journal* 828:10 (10 pages).
- [25] **Lhotka C.**, Celletti A., Gales C., 2016: “*Poynting-Robertson drag and solar wind in the space debris problem*”, *Monthly Notices of the Royal Astronomical Society* 460, 802–815.
- [24] **Lhotka C.**, Reimond S., Souchay J., Baur O., 2016: “*Gravity field and solar component of the precession rate and nutation coefficients of Comet 67P/Churyumov–Gerasimenko*”, *Monthly Notices of the Royal Astronomical Society* 455, 3588-3596.
- [23] Sansottera M., **Lhotka C.**, Lemaître A., 2015: “*Effective resonant stability of Mercury*”, *Monthly Notices of the Royal Astronomical Society* 452, 4145-4152.
- [22] **Lhotka C.**, 2015: “*Sitnikov's planet*”, *Rivista dell'Unione Matematica Italiana Ser I*: 8,1-31.
- [21] **Lhotka C.**, Celletti A., 2015: “*The effect of Poynting-Robertson drag on the triangular Lagrangian points*”, *Icarus* 250, 249-261.
- [20] Sansottera M., **Lhotka C.**, Lemaître A., 2014: “*Effective stability around the Cassini state in the spin-orbit problem*”, *Celestial Mechanics & Dynamical Astronomy* 119, 75-89.
- [19] Celletti A., **Lhotka C.**, 2014: “*Transient times, resonances and drifts of attractors in dissipative rotational dynamics*”, *Communications in Nonlinear Science and Numerical Simulation* 19, 3399-3411.
- [18] Souchay J., Souami D., **Lhotka C.**, Puente V., Folgueira M., 2013: “*Rotational changes of the asteroid 99942 Apophis during the 2029 close encounter with the Earth*”, *Astronomy & Astrophysics* 563, A24.
- [17] Petit A., Souchay J., **Lhotka C.**, 2013: “*High precision model of precession and nutation of the asteroids (1) Ceres, (4) Vesta, (433) Eros, (2867) Steins, and (25143) Itokawa*”, *Astronomy & Astrophysics* 565, A79.
- [16] **Lhotka C.**, Souchay J., Shahsavari A., 2013: “*Obliquity, precession rates, and nutation coefficients for a set of 100 asteroids*”, *Astronomy & Astrophysics* 556, A8, (9 pages).
- [15] Noyelles B., **Lhotka C.**, 2013: “*The influence of time, shape and tides on the obliquity of Mercury*”, *Advances in Space Research* 52, 2085-2101.
- [14] **Lhotka C.**, 2013: “*A symplectic mapping for the synchronous spin-orbit problem*”, *Celestial Mechanics &*

Dynamical Astronomy 115 405-426.

[13] **Lhotka C.**, Celletti A., 2013: “*Stability of nearly-integrable systems with dissipation*”, International Journal of Bifurcation & Chaos 23, 1350036 (25 pages).

[12] Dvorak R., **Lhotka C.**, Zhou L., 2012: “*The orbit of 2010 TK7: possible regions of stability for other Earth Trojan asteroids*”, Astronomy & Astrophysics 541, A127 (10 pages).

[11] Celletti A., **Lhotka C.**, 2012: “*Normal form construction for nearly-integrable systems with dissipation*”, Regular and Chaotic Dynamics 17, 273-292.

[10] Celletti A., **Lhotka C.**, 2011: “*A dynamical system approach to Astrodynamics*”, Acta Futura 4, 53-68.

[9] Di Ruzza S., **Lhotka C.**, 2011: “*High order normal form construction near the elliptic orbit of the Sitnikov problem*”, Celestial Mechanics & Dynamical Astronomy 111, 449-464.

[8] Celletti A., Di Ruzza S., **Lhotka C.**, Stefanelli L., 2010: “*Nearly-integrable dissipative systems and celestial mechanics*”, European Physical Journal, Special Topics 186, 33-66.

[7] Bazso A., Dvorak R., Pilat-Lohinger E., Eybl V., **Lhotka Ch.**, 2010: “*A survey of near-mean-motion resonances between Venus and Earth*”, Celestial Mechanics & Dynamical Astronomy 107, 63-76.

[6] Hongyan M., Maoan H., **Lhotka C.**, 2009: “*Limit cycles of some Z3-equivariant near-Hamiltonian systems of degree 3 and 4*”, Annals of Differential Equations 2, 170-178.

[5] **Lhotka C.**, 2009: “*Dynamic expansion points: an extension to Hadjidemetriou's mapping method*”, Celestial Mechanics & Dynamical Astronomy 104, 175-189.

[4] Dvorak R., **Lhotka C.**, Schwarz R., 2008: “*The dynamics of inclined Neptune Trojans*”, Celestial Mechanics & Dynamical Astronomy 102, 97-110.

[3] **Lhotka C.**, Efthymiopoulos C., Dvorak R., 2008: “*Nekhoroshev stability at L4 and L5 in the elliptic restricted three-body problem - application to Trojan asteroids*”, Monthly Notices of the Royal Astronomical Society 284, 1165-1177.

[2] **Lhotka C.**, Funk B., 2008: “*BRITE orbits – visibility and feature plots*”, Communications in Astroseismology 152, 51-54.

[1] Hagel J., **Lhotka C.**, 2005: “*A high order perturbation analysis of the Sitnikov problem*”, Celestial Mechanics & Dynamical Astronomy 93, 201-228.

### **C. Further scientific publications :**

[7] Dvorak R., **Lhotka C.**, 2014: “*Sitnikov problem*”, [www.scholarpedia.org](http://www.scholarpedia.org), online 9 (12) 11096, doi:10.4249/scholarpedia.11096.

[6] **Lhotka C.**, Zhou L., Dvorak R., 2012: “*On the stability of Earth's Trojan asteroids*”, Journees 2011, Earth rotation, reference systems, and celestial mechanics: synergies of geodesy and astronomy, Eds. Shuh H., Böhm S., Nilson T., Capitaine N., 221-224.

[5] **Lhotka C.**, 2011: “*Birkhoff normal form and remainder of the Sitnikov problem*”, 5-th Austrian-Hungarian Workshop, Proceedings, Eötvös University Budapest, Hungary, PADEU 20, 179-190.

[4] **Lhotka C.**, 2009: “*Nekhoroshev stability in the elliptic restricted three-body problem*”, Thesis University of Vienna, <http://othes.univie.ac.at/3528/>.

[3] Dvorak R., Schwarz R., **Lhotka C.**, 2008: “*On the dynamics of Trojan planets in extra-solar planetary systems*”, Proceedings of the International Astronomical Union, IAU Symposium 249, 461-468.

[2] **Lhotka C.**, Dvorak R., 2006: “*A new determination of the fundamental frequencies in our Solar system*”, Proceedings of the 4th Austrian Hungarian Workshop on Celestial Mechanics, Publications of the Astronomy Department of the Eötvös University Vol 18, 33-46.



[1] **Lhotka C.**, 2004: “*Störungsanalyse des Sitnikov Problems für hohe Ordnungen unter Verwendung automatisierter Herleitungsmethoden in Mathematica*“, master thesis, University of Vienna, <http://www.univie.ac.at/adg/BacMac/christophdipl.html>.

## D. Abstracts and posters :

- [13] **Lhotka C.**, Bourdin P., Pilat-Lohinger E., 2019: “*Finite-time Lyapunov exponents in zones of magnetic reconnection in Earth’s magneto-tail*“, EGU 2019, Vienna, Austria 07-12/04/2019.
- [12] **Lhotka C.**, Bourdin P., Pilat-Lohinger E., 2018: “*Chaotic motions of plasma and dust particles in magnetic reconnection regimes in Earth’s magnetotail*“, COSPAR 2018, Pasadena, USA 14-22/07/2018.
- [11] **Lhotka C.**, 2018: “*Cassini states in  $p:q$  spin-orbit resonances*“, EGU 2018, Vienna, Austria 08-13/04/2018.
- [10] **Lhotka C.**, 2017: “*The role of the interplanetary magnetic field on charged dust dynamics*“, EGU 2017, Vienna, Austria 08-13/04/2017.
- [9] **Lhotka C.**, Sansottera M., Lemaitre A., 2016: “*Effective resonant stability of Mercury*” EGU 2016, Vienna, Austria 17-22/04/2016.
- [8] **Lhotka C.**, Reimond S., Souchay J., Baur O. 2015: “*Obliquity, precession rate, and nutation coefficients of 67/P Churyumov-Gerasimenko*”, EGU 2015, European Geosciences Union - Vienna, Austria 04/2015.
- [7] Noyelles B., **Lhotka C.**, D’Hoedt S., 2013: “*Towards an accurate modelization of the obliquity of Mercury*”, American Astronomical Society DDA Meeting - Paraty, Brazil 05/2013.
- [6] Noyelles B., **Lhotka C.**, 2012: “*Modelling the obliquity of Mercury*”, AGU 2012 Francisco, USA 12/2012.
- [5] **Lhotka C.**, 2007: “*Nekhoroshev Estimates in the Elliptic Restricted Three-Body Problem II*”, conference in honour of C. Froeschlé - Spoleto, Italy 06/2007.
- [4] **Lhotka C.**, 2007: “*Nekhoroshev Estimates in the Elliptic Restricted Three-Body Problem*”, CRANS summer school and conference in Patras - Patras, Greece 07/2007.
- [3] **Lhotka C.**, 2007: “*Nekhoroshev Estimates in the 1:1 Resonance of Our Solar System I: Symplectic Mappings in the Elliptic Restricted Three Body Problem*”, Wissenschaftliche Jahrestagung der ÖGA - Vienna, Austria 04/2007.
- [2] Funk B., **Lhotka C.**, Pilat-Lohinger E., Dvorak R., Schwarz R., 2005: “*The Stability of few Body Systems (The Sitnikov Problem, Our Solar System, Extra solar Systems)*” conference Maribor, Slovenia 06/2005.
- [1] **Lhotka C.**, 2003: “*A High Order Perturbation Analysis of the Sitnikov Problem by Using Mathematica*” – CRANS summer school and conference in Patras, Greece 07/2003.

## E. Scientific talks :

- [43] “*Dynamics of Charged Dust in the Solar System*”, Dynamics and Physics of Asteroids, Akdeniz Üniversitesi, Antalya, Turkey (04-06/09/2019) [**invited talk**].
- [42] “*Temporary capture of charged dust close to outer mean–motion resonance with a planet*”, Planetary Dynamics conference, Max Planck Institute for Astronomy in Heidelberg, Germany (03-07/6/2019).
- [41] “*Charged particle dynamics in celestial mechanics*”, Institute Seminar, Department of Mathematics, University of Milan (13/12/2018).
- [40] “*Motion of dust subject to solar wind and interplanetary magnetic fields*”, 9<sup>th</sup> Moscow Solar System Symposium 2018, Moscow, Russia (09/10/2018).
- [39] “*Cassini states in  $p:q$  spin-orbit resonances*”, EGU 2018, Vienna, Austria (12/04/2018).
- [38] “*Stable Cassini states of a rigid body in the  $p:q$  spin-orbit resonant problem. Application to Mercury*”, CELMEC VII, Viterbo, Italy (4/9/2017).

- [37] “*Stable motions of charged dust grains subject to solar wind, Poynting-Robertson drag, and the mean interplanetary magnetic field*”, joint EPSC 11 – DPS 482016, Pasadena, USA (21/10/2016).
- [36] “*Effective resonant stability of Mercury*”, EGU 2016, Vienna, Austria (20/04/2016).
- [35] “*Perturbation theory at arbitrary expansion points – Applications in Celestial Mechanics*”, Computational perturbative methods for Hamiltonian systems, Athens, Greece (13/07/2016).
- [34] “*Rotational study of 67P/Churyumov-Gerasimenko*”, EPSC 2015, European Planetary Science Congress, Nantes, France (30/09/2015).
- [33] “*The use of dissipative normal forms and averaging methods in celestial dynamics*”, Theoretical and computational methods in dynamical systems and fractal geometry, University of Maribor, Slovenia (08/04/2015).
- [32] “*Complex motion of dust-size particles in the vicinity of the 1:1 mean motion resonance with a planet*”, IAU-Symposium: Complex Planetary Systems, University of Namur, Belgium (10/07/2014).
- [31] “*Temporary capture of dust in the 1:1 MMR with a planet*”, PhD-Seminar, Institut für Astrophysik, Universität Wien (28/04/2014).
- [30] “*Orbit, rotation & shape of celestial bodies*”, Séminaire Interne, Université de Nice, Salle de Conference, Sophia Antipolis (10/03/2014).
- [29] “*Poynting-Robertson drag in the 1:1 mean motion resonance*”, Astrodynamics Group, University of Vienna, Institute for Astrophysics, Vienna, Austria (07/11/2013).
- [28] “*On the generalization of Peale's formula*”, 6<sup>th</sup> International Meeting on Celestial Mechanics (CELMEC VI) – Balletti Park Hotel, San Martino al Cimino, Viterbo, Italy (02/09/2013).
- [27] “*On the dynamics in the Lagrange problem subject to non-gravitational forces*”, Mathematics for Planet Earth (MMPE 2013), Centre de recherches mathématiques, Montreal, Canada (24/07/2013) [***invited talk***].
- [26] “*Normal forms in dissipative systems in our Solar system*”, Astrodynamics Group, University of Vienna, Institute of Astrophysics, Vienna, Austria (02/05/2013).
- [25] “*Higher order and time dependent effects on the obliquity of Mercury*”, Astrodynamics Group, University of Vienna, Institute for Astrophysics, Vienna, Austria (25/10/2012).
- [24] “*A Hadjidemetriou mapping for the spin-orbit problem*”, Astrodynamics Group, University of Vienna, Institute for Astronomy, Vienna, Austria (01/03/2012).
- [23] “*Exponential stability in non-conservative dynamical systems*”, Université de Namur, Département de Mathématique, Unité de systèmes dynamiques, Namur, Belgium (21/10/2011) [***invited seminar***].
- [22] “*On the stability of Earth's Trojans*”, Journées Systèmes de référence spatio-temporels, Bundesamt f. Eich- und Vermessungswesen, Vienna, Austria (20/09/2011).
- [21] “*Exponential Stability in nearly-Hamiltonian Systems*”, Università degli Studi Roma Tre, Dipartimento di Matematica - Rome, Italy (02/05/2011) [***invited seminar***].
- [20] “*New applications of normal form theory in celestial mechanics*”, 8<sup>th</sup> Alexander v. Humboldt Colloquium, Bad Hofgastein, Salzburg, Austria (24/03/2011) [***invited talk***].
- [19] “*Normal Form Theory with Mathematica*”, 4<sup>th</sup> Mathematica Italian User Group Meeting – Università degli Studi di Milano, Italy (07/10/2010).
- [18] “*Mathematica and Astronomy – new computational tools*”, II. Meeting on Cultural Astronomy, Università degli Studi del Molise, Campobasso, Italy (30/09/2010).
- [17] “*Normal Form and Remainder of the Sitnikov Problem*”, XXXV Scuola di Fisica Matematica - Ravello, Italy (20/09/2010).
- [16] “*Nekhoroshev estimates around Kolmogorov-Arnold-Moser tori in the Sitnikov problem*”, 5<sup>th</sup> Austrian-

Hungarian Workshop, Vienna, Austria (10/04/2010).

[15] “*Interactive snapshots of science ... made possible by Mathematica*”, 3<sup>rd</sup> Mathematica Italian User Group Meeting, Università degli Studi di Padova, Italy (25/09/2009).

[14] “*Spatial diffusion rates near the 3:1 MMR of an asteroid with Jupiter*”, 5<sup>th</sup> International Meeting on Celestial Mechanics (CELMEC V) - Viterbo, San Martino al Cimino, Italy (07/09/2009) [**invited talk**].

[13] “*Dynamic Expansion Points*”, Centre Paul Langevin - Ecole de Mécanique Céleste Aussois, France (06/2009) [**invited talk**].

[12] “*Exponential Stability Estimates in Hamiltonian Systems. Application to Trojan Asteroids*”, University of Nanjing, Center for Nonlinear Science - Nanjing, China (10/2008) [**invited seminar**].

[11] “*Nekhoroshev estimates in a symplectic mapping model of the 1:1 resonance of the elliptic restricted three-body problem*”, Conference on Applications of Computer Algebra - RISC - Hagenberg, Austria (29/07/2008).

[10] “*Exponential Stability Estimates for Trojan Asteroids – Nekhoroshev Theorem meets Celestial Mechanics*”, University of Maribor, Center for Applied Mathematics and Theoretical Physics – Maribor, Slovenia (04/07/2008) [**invited talk**].

[9] “*On the Expansion of the Generating Function in the Mapping Case. Hadjidemetriou’s method revisited*”, 7<sup>th</sup> Alexander von Humboldt Colloquium - Bad Hofgastein, Austria (03/04/2008) [**invited talk**].

[8] “*Exponential Stability Estimates in the Elliptic Restricted Three-Body Problem*”, 6<sup>th</sup> Christmas Symposium - Maribor, Slovenia (14/12/2007) [**invited talk**].

[7] “*Nekhoroshev Estimates in the 1:1 Resonance of Our Solar System II: Symplectic Mappings in the case of Jupiter*”, University of Patras, Center of Research and Applications of Nonlinear Systems (CRANS) - Patras, Greece (02/2007).

[6] “*Automated Derivation Methods in the Sitnikov problem – Lindstedt-Series done with Mathematica*”, Academy of Athens, Research Center for Astronomy & Applied Mathematics, Athens, Greece (12/2006).

[5] “*Nekhoroshev Estimates of Asteroids in the 1:1 resonance*”, conference on “*Asteroids and Resonances*”, Observatoire de Paris - Meudon, France (09/2006).

[4] “*Chaos in our Solar System - The fundamental frequencies in the dynamics of our planetary system*”, IV. Austrian - Hungarian Workshop, Budapest, Hungary (24/06/2005).

[3] “*How your Mathematica is getting faster and faster without losing generality or functionality*”, Academy of Athens, Research Center for Astronomy & Applied Mathematics - Athens, Greece (03/2005) [**invited seminar**].

[2] “*An introduction to Mathematica - applications to dynamical astronomy*”, University of Vienna, Institute for Astronomy - Vienna, Austria (summer term 2004).

[1] “*A High Order Perturbation Expansion to the Sitnikov Problem by using Mathematica*”, 6<sup>th</sup> Alexander von Humboldt Colloquium - Bad Hofgastein, Salzburg, Austria (23/03/2004).

## **F. Public relations (selection) :**

[20] European Researcher’s Night, University of Applied Arts, Vienna (28/09/2018).

[19] Austrian movie premiere “*Ad Astra*”, podium discussion, Village Cinemas, Vienna (19/09/2019).

[18] Hochsteiner G., **Lhotka C.**, news paper interview in ‘Die Brücke’ (29/05/2019).

[17] Weltraumball (Space Ball) 2019 , IWF representative, Haus Niederösterreich, Vienna (16/02/2019).

[16] Austrian movie premiere “*First Man*”, podium discussion, Hollywood Megaplex, Vienna (07/11/2018).

[15] Senarclens De Grancy A., **Lhotka C.**, news paper interview in ‘Die Presse’ (14/04/2018).

[14] European Researcher’s Night, Technisch Gewerbliche Mittelschule, Vienna (28/09/2018).



- [13] Lange Nacht der Forschung, Space Research Institute, Graz (13/04/2018).
- [12] **Lhotka C.**, Public talks, Astronomy Days, Space Research Institute, Graz (25/03/2017).
- [11] Guidance, Sternwarte Wien, Lange Nacht der Forschung, Vienna (22/04/2016).
- [10] **Lhotka C.**, “*Merkur, der 'schwierige' Planet*”, public talk, Kuffnersternwarte, Vienna 05/2014.
- [9] Dvorak R., **Lhotka C.**, 2014: “*The Sitnikov Problem*”, *scholarpedia.org*.
- [8] **Lhotka C.**, 2014: “*Warum das Wasser auf die Erde kam*”, public talk, Sternwarte Wien - Lange Nacht der Forschung 2014.
- [7] **Lhotka C.**, Guidance, Sternwarte Wien (private groups, 'Lange Nacht der Forschung', Antares NÖ) 04/04/2014
- [6] **Lhotka C.**, 2013: “*Leben und Forschen in der ewigen Stadt*”, Panoptikum, FWF-info Magazin 3/13, 50-51.
- [5] **Lhotka C.**, 2013: “*Merkurs sehr spezielle Rotation und seine exzentrische Bahn*”, Leser Fragen – Experten Antworten, Sterne & Weltraum 01/2013.
- [4] Celletti A., Di Ruzza S., **Lhotka C.**, 2010: “*Stage – in Astrophysics*” high-school meets University, Università degli Studi Roma Tor Vergata, Dipartimento di Matematica, 06/2010.
- [3] **Lhotka C.**, 2008-2019: *Online Interactive Demonstrations* Wolfram Demonstrations
- [2] **Lhotka C.**, 2008: “*Trojaner in unserem Sonnensystem*”, öffentlicher Vortrag, WAA (Wiener Arbeitsgemeinschaft für Astronomie), Vienna 02/2008.
- [1] Eggl S., **Lhotka C.**, 2007: “*Climate Change*”, Video Climate Change, Natural History Museum Vienna, permanent exhibition since 2007.



Graz, 31/10/2019