

CV Christoph Lhotka

Personal information :

Birth : November 1978 in Vienna, Austria
Citizenship : Austrian
Academic degrees : **Magister** rerum naturalium (Universität Wien **14/12/2004**)
Doktor rerum naturalium (Universität Wien **18/02/2009**)

Habilitation :

Type : **Associate Professor in Mathematical Physics**
Duration : **17/10/2014 → 31/05/2032**
Authority : Ministero dell'Università e della Ricerca, Abilitazione Scientifica Nazionale
Risultati ASN 01/A4 - FISICA MATEMATICA

Contact details :

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Scientific job experience :

10 / 2023 – now	Associate Professor in Mathematical Physics – Fascia II , <i>Università degli Studi di Roma Tor Vergata, Dipartimento di Matematica</i> , Rome, Italy.
10 / 2020 – 09 / 2023 (35 months)	Associate Researcher in Mathematical Physics – RTDb , <i>Università degli Studi di Roma Tor Vergata, Dipartimento di Matematica</i> , Rome, Italy.
04 / 2020 – 09 / 2020 (6 months)	PostDoc Scientist , <i>Institut für Astrophysik</i> , Universität Wien, Vienna, Austria.
11 / 2014 – 03 / 2020 (64 months)	PostDoc Scientist , <i>Österreichische Akademie der Wissenschaften, Institut für Weltraumforschung</i> , Graz, Austria.
01 / 2014 – 06 / 2014 (6 months)	PostDoc Scientist , <i>Universität Wien, Institut für Astronomie</i> , Wien, Vienna, “Dissipative normal forms”, FWF J-3206.
01 / 2013 – 12 / 2013 (12 months)	PostDoc Scientist , <i>Università degli Studi di Roma Tor Vergata, Dipartimento di Matematica</i> , Rome, Italy, FWF, J-3206.
07 / 2011 – 12 / 2012 (18 months)	PostDoc Scientist , <i>Université de Namur, Département de Mathématique</i> , Namur, Belgium, BELSPO (Belgian Space Agency).
06 / 2009 – 05 / 2011 (24 months)	PostDoc Scientist , <i>Università degli Studi di Roma Tor Vergata, Dipartimento di Matematica</i> , Rome, Italy, ASI (Italian Space Agency), “Studi di Esplorazione del Sistema Solare”.
03 / 2009 – 05 / 2009 (3 months)	PostDoc Scientist , <i>Universität Wien, Institut für Astronomie</i> , Vienna, Austria, FWF P-18930.
07 / 2006 – 02 / 2009 (32 months)	PhD Research Fellow , <i>Universität Wien, Institut für Astronomie</i> , Vienna, Austria, “Effective stability in non-linear dynamical systems”, FWF P-18930.
05 / 2005 – 06 / 2006 (14 months)	Employee , <i>Austria Wirtschaftsservice GmbH</i> , Vienna, Austria, ideenreich, uni:invent.

Working stays abroad :

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

Language skills :

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

Short summary of scientific activities :

- **Author** : 1 Wiley textbook (320 pages), 60+ publications in scientific journals.
- **Invited Speaker** : 50+ talks at international conferences

Acquired grants & grant participation :

- Project Coordinator**, Univ. Tor Vergata, “Scientific Activities for JUICE 3GM – WP4300” (2024-2032)
Project Member, Univ. Tor Vergata, “Machine Learning Methods” (2025-2027)
Project Lead, Univ. Tor Vergata, “Nonlinear stability of dust” (2021-2024)
Project Lead, FWF P-30542 “Stability of charge and orbit of cosmic dust particles” (2018-2022)
Project Lead, FWF J-3206 “Dissipative normal forms in the Lagrange problem” (2013-2014)
Member, PRIN National Project I-CELMech, funded by M.I.U.R. (2019-2022)
Member, EU grant: Marie Curie Initial Training Network “Stardust” (2019-2024)

Teaching experience :

University of Rome Tor Vergata, Italy 2011, 2020 – 2024 (500+ hours) : Lecturer

University of Vienna, Austria 2008 – 2020 (50+ ECTS) : Lecturer

Technical University of Graz, Austria 2016 – 2018 (10 ECTS) : Lecturer

University of Namur, Belgium 2012 (6 ECTS) : Maître de conférences

Shanghai Normal University, China 2008 (16 hours) : Invited Lecturer

Basic topics: Analysis, Astronomy, Calculus, Differential equations, Linear algebra, Programming in C/C++, Scientific algorithms, Time series analysis; **Advanced topics**: Celestial mechanics, Numerical solvers, Nonlinear dynamics, Perturbation theory, Wolfram language

Academic service :

Coordinator of Master in Space Science and Technology ([link](#)) including sponsorship acquisition, academic program coordination, course evaluations;

Completed (co-)supervision of several [students](#) (since 2020/21).

Chair and member of search committees;

Member of examination commission;

Supervision of students at the bachelor, master and PhD level;

Activities in international meetings and organizations :

SOC Member “*The Ninth International Meeting on Celestial Mechanics*” (Viterbo, Italy held in 2026)

SOC Chair, “*CM&DA prizes 2023*” (Rome, Italy 2023)

SOC Member, “*The Eighth International Meeting on Celestial Mechanics*” (Rome, Italy 2022)

Organizer, “*Machine Learning and Computer Assisted Proofs*” (online 2021)

SOC Chair, “9th Alexander von Humboldt Colloquium for Celestial Mechanics” (Salzburg, Austria 2017)

SOC Member, “Dynamics and Physics of Asteroids” (Antalya, Turkey, 2019)

SOC Member “Stardust-R Network Training School III” (Iasi, Romania, 2021)

Session Chair, “Dust and Solar Wind”, DPS 48 / EPSC 11, (Pasadena, USA, 2016)

Lecturer, “Natural Space Risks”, Paris Observatory (Paris, France) in 2017 and in 2019

Member of LOC, “IAU-Symposium: Complex Planetary Systems” (Belgium 2014) -- *International Meeting on Celestial Mechanics* (Italy 2013, 2009) -- *Humboldt Colloquium for Celestial Mechanics* (2011, 2008)

Member of scientific organizations :

IAU individual member International Astronomical Union (Division A, E, F, Inter-Division A-F), Commission Celestial Mechanics & Dynamical Astronomy (since June 2020)

GNFM Member Gruppo Nazionale Fisica Matematica (National Institute of Higher Mathematical Studies)

Member Italian National Research Program “New Frontiers of Celestial Mechanics: theory and applications” (Ministry of Sciences, MIUR-PRIN 20178CJA2B)

Member Marie Skłodowska-Curie Innovative Training Networks, Stardust-R Grant Agreement 81364

Member Scientific Activities for JUICE space mission C/D phase, ASI contract n. 2018-25-HH.0

Reviewer activity and editorial work :

Associate Editor Celestial Mechanics & Dynamical Astronomy, ISSN: 0923-2958

Handling Editor Topical Collection: Main Belt Dynamics, ISSN: 0923-2958

Guest Editor “Close Approaches and Collisions in Planetary Systems”, ISSN: 0923-2958

Guest Editor “Spacecraft Potential Theory and Observations”, ISSN: 2226-4310

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

Reviewer of national grant proposals from Belgium, Germany, and Italy.

Expert in project evaluation for European Commission

20487 Lhotka :

I am honoured to share my name -- in recognition of my contribution to the study of minor bodies in the solar system -- with asteroid 20487 Lhotka (1999 NJ62), discovered on 13 July 1999 by LINEAR at Socorro (see WGSBN Bull. 6, #11, 23).

www :

Researcher ID: C-7716-2017

Scopus Author ID: 55346961600

Web of Science ResearcherID: MZQ-4041-2025

ORCID: 0000-0002-7552-2941

[work](#) , [homepage](#) , [google scholar](#) , [linkedin](#) , [orcid](#) , [researchgate](#)

Publication list

A. Books :

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

B. Peer-reviewed papers :

- [49] Celletti A., **Lhotka C.**, 2026: “*The stochastic two-body problem with dissipation*”, *Celestial Mechanics and Dynamical Astronomy* (accepted).
- [49] **Lhotka C.**, Pucacco, G., Veglianti, M., 2025: “*On Ganymede's synchronous rotation in the presence of a subsurface ocean*”, *Celestial Mechanics and Dynamical Astronomy* 137, id.37.
- [48] Bustamante, A.P., Celletti, A., **Lhotka C.**, 2025: “*The dynamics of the spin-spin problem in Celestial Mechanics*”, *Communications in Nonlinear Science and Numerical Simulation* 142, 108548 .
- [47] Celletti, A., **Lhotka C.**, Pucacco, G., 2024: “*The dynamics around the colinear points of the elliptic three-body problem: a normal form approach*”, *Physica D: Nonlinear phenomena* 468, 134302.
- [46] Bustamante, A., Celletti, **Lhotka C.**, 2023: “*Breakdown of rotational tori in 2D and 4D conservative and dissipative standard maps*”, *Physica D: Nonlinear Phenomena* 453, 133790.
- [45] Reiter, S., **Lhotka C.**, 2023: “*Dynamics of dust and meteoroids due to electromagnetic transport in the heliosphere*”, *MNRAS* 524, 2078-2087.
- [44] Reiter, S., **Lhotka C.**, 2022: “*Latitudinal dynamics of co-orbital charged dust in the heliosphere*”, *Astronomy & Astrophysics* 666, A123, 14pp.
- [43] Xu, Y.-B., Zhou, L., **Lhotka C.**, Zhou, L.-Y., Ip, W.-H., 2022: “*Trojan asteroids and the co-orbital dust ring of Venus*”, *Astronomy & Astrophysics* 666, A88, 10pp.
- [42] Celletti, A., Karampotsiou, E., **Lhotka C.**, Pucacco, G., Volpi, M., 2022: “*The role of tidal forces in the long-term evolution of the Galilean system*”, *Regular & Chaotic Dynamics* 27, 381-408.
- [41] Reiter, S., **Lhotka C.**, 2022: “*Latitudinal variations of charged dust in co-orbital resonance with Jupiter*”, *Proceedings of the IAU 15, S364: Multiscale Dynamics of Space Objects*, 102-107.
- [40] **Lhotka C.**, Zhou, L., 2022: “*Tadpole type motion of charged dust in the Lagrange problem with planet Jupiter*”, *Communications in Nonlinear Science and Numerical Simulation* 104, 106024.
- [39] Celletti, A., Karampotsiou, E., **Lhotka C.**, Pucacco, G., Volpi, M., 2021: “*Laplace-like resonances with tidal effects*”, *Astronomy & Astrophysics* 655, A94.
- [38] Zhou, L., **Lhotka C.**, Gales, C., Narita, Y., Zhou, L.-Y., 2021: “*Dynamics of charged dust in the orbit of Venus*”, *Astronomy & Astrophysics* 645, A63.
- [37] **Lhotka C.**, Rubab N., Roberts O.W., Holmes J.C., Torkar K., Nakamura R., 2020: “*Charging time scales and magnitudes of dust and spacecraft potentials in space plasma scenarios*”, *Physics of Plasmas* 27, 103704 (13 pages).
- [36] Roberts O.W., Nakamura R., Torkar K., Narita Y., Holmes J.C., Vörös Z., **Lhotka C.**, Escoubet C.P., Graham D.B., Gershman D.J., Khotyaintsev Y., Lindqvist P.-A., 2020: “*Sub-ion Scale Compressive Turbulence in the Solar Wind: MMS Spacecraft Potential Observations*”, *The Astrophysical Journal Supplement Series* 250, 35 (20 pages).
- [35] Milillo A., Fujimoto M., Murakami G., ... **Lhotka C.** et al., 2020: “*Investigating Mercury's Environment with the Two-Spacecraft BepiColombo Mission*”, *Space Science Reviews* 216, 93 (78 pages).
- [34] Krauss S., Behzadpour S., Temmer M., **Lhotka C.**, 2020: “*Exploring Thermospheric Variations Triggered by Severe Geomagnetic Storm on 26 August 2018 Using GRACE Follow-On Data*”, *Geophysical Research: Space Physics* 125, e27731 (14 pages).
- [33] Celletti A., Gales C., **Lhotka C.**, 2020: “*(INVITED) Resonances in the Earth's space environment*”, *Communications in Nonlinear Science and Numerical Simulation* 84, 105185.
- [32] Xu, Y.B., Zhou, L.Y., **Lhotka C.**, Ip, W.H., 2020: “*Asteroid migration due to the Yarkovsky effect and the distribution of the Eos family*”, *Monthly Notices of the Royal Astronomical Society* 493, 1447-1460.
- [31] **Lhotka C.**, Gales C., 2019: “*Charged dust close to outer mean-motion resonances in the heliosphere*”,

- [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 (11 pages).
- [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 Z_3 -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 L_4 and L_5 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. Abstracts and posters :

- [19] **Lhotka C.**, Dvorak R., Pucacco G., “*The Art of the Invisible Force: The Dynamics of Equilibria Near and Far*”, Academy of Sciences 2025, Budapest, Hungary.
- [18] Celletti A., Karampotsiou E., **Lhotka C.**, Pucacco G., Volpi M. 2022: “*Evolution and stability of Laplace-like resonances under tidal dissipation*”, Proceedings of the IAU 364, Iasi, Romania.
- [17] Krauss S., Temmer M., Behzadpour S., **Lhotka C.**, 2020: “*Latitudinal variations of charged dust in co-orbital resonance with Jupiter*”, Proceedings of the IAU 364, 2021, Iasi, Romania.
- [16] Roberts O., Nakamura R., Narita Y., Holmes J., Voros Z., **Lhotka C.**, Thwaites J. 2020: “*Sub-ion scale measurements of compressible turbulence in the solar wind MMS Observations*”, EGU 2020, Vienna, Austria.
- [15] Krauss S., Temmer M., Behzadpour S., **Lhotka C.**, 2020: “*Analysis of a severe geomagnetic storm on August 26, 2018 and the related effects on the GRACE-FO mission*”, EGU 2020, Vienna, Austria.
- [14] Roberts O., Nakamura R., Narita Y., Holmes J., Voros Z., **Lhotka C.**, Thwaites J., 2020: “*Sub-ion scale measurements of compressible turbulence in the solar wind MMS Observations*”, EGU 2020, Vienna, Austria 04-08/05/2020.
- [13] **Lhotka C.**, Bourdin P., Pilat-Lohinger E., 2019: “*Finite-time Lyapunov exponents in zones of magnetic reconnection in Earth's magnetotail*”, 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., Lemaître 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.

D. Further scientific publications :

- [7] Dvorak R., **Lhotka C.**, 2014: "*Sitnikov problem*", 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>.

E. Scientific talks :

- [45] "*Stability of first-order resonant chains of 3 planets*", Conference in Honour of Balint Erdi, Academy of Sciences, Budapest, Hungary (2-4/6/2025).
- [44] "*Dynamics of Charged Dust and Space Debris due to Space Weather Effects*", 2nd International Stardust Conference, European Space Research and Technology Centre, Noordwijk, The Netherlands (7-11/11/2022).
- [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*", 9th 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 48 2016, 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”, 6th 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”, 8th Alexander v. Humboldt Colloquium, Bad Hofgastein, Salzburg, Austria (24/03/2011) [*invited talk*].
- [19] “Normal Form Theory with Mathematica”, 4th 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”, 5th Austrian-Hungarian Workshop, Vienna, Austria (10/04/2010).
- [15] “Interactive snapshots of science ... made possible by Mathematica”, 3rd 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”, 5th 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”, 7th Alexander von Humboldt Colloquium - Bad Hofgastein, Austria (03/04/2008) [*invited talk*].
- [8] “Exponential Stability Estimates in the Elliptic Restricted Three-Body Problem”, 6th 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*", 6th 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 (28/09/2019).

[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.



Rome, 01/09/2026