PERSONAL INFORMATION

First Name	Elisa Maria	*Date of birth*	19 April 1981
Last Name	Alessi	*E-mail Address*	elisamaria.alessi@cnr.it

EDUCATION

09/2007 – 10/2010	**Ph.D. cum laude in Applied Mathematics**, funded by a Marie Curie fellowship Universitat de Barcelona (Spain) "The Role and Usage of Libration Point Orbits in the Earth-Moon System" *Supervisors*: Prof. G. Gómez and J.J. Masdemont
10/2005 – 07/2007	**Master's Degree in Applied Mathematics (Diploma d'Estudis Avançats)**, Universitat de Barcelona (Spain) "Numerical approximation of invariant tori", Prof. À. Jorba "Leaving and reaching the Moon from a libration point orbit", Prof. G. Gómez
10/1999 – 03/2005	**Master's Degree in Physics (Laurea V.O.)** Università degli Studi di Padova (Italy) "Low-energy transfers in the Elliptic Restricted Three–Body Problem" *Supervisor*: Dr. S. Casotto
09/2003 – 04/2004	**Visiting student**, University of California Los Angeles (U.S.A.)

EXPERIENCE

01/01/2023	**Senior Researcher** (Primo Ricercatore or Ricercatore II livello), IMATI-CNR
27/12/2018 – 31/12/2022	**Researcher** (Ricercatore III livello a Tempo Indeterminato) Istituto di Matematica Applicata e Tecnologie Informatiche "E. Magenes", Milan, Consiglio Nazionale delle Ricerche (Italy) *Dynamical systems theory and numerical methods applied to the motion of artificial and natural bodies in the Solar System*
08/2022	**Visiting Researcher at University of Helsinki** (Finland). Host: Prof. M. Granvik.
09/2016 – 12/2018	**Fixed-term Researcher**, funded by the ReDSHIFT H2020 project Istituto di Fisica Applicata "Nello Carrara", Sesto Fiorentino, CNR (Italy) *Space debris dynamics*: special emphasis on the design of passive end-of-life disposal trajectories, perturbation modeling and effects *Supervisor:* Dr. A. Rossi
08/2018 & 11/2018	**Visiting Researcher at Khalifa University of Science and Technology** Abu Dhabi (United Arab Emirates). Host: Prof. E. Fantino.
12/2015 & 03/2021	**Maternity Leave**, 5 months
12/2012 – 08/2016	**Research Fellow (Assegnista di Ricerca)**, funded by the SPARC EU project IFAC-CNR (Italy) *Space debris and asteroids dynamics*: end-of-life disposal trajectories, environmental analysis, impact dynamics on rocky bodies *Supervisor:* Dr. A. Rossi
07/2013 – 08/2013	**Visiting Researcher at IMCCE** IMCCE – Laboratoire d'astronomie de Lille (France). Host: Dr. F. Deleflie.
11/2010 – 12/2012	**Research Fellow (Assegnista di Ricerca)**, funded by ASI Department of Mathematics, Università di Pisa (Italy) *Orbit determination for the radioscience experiment of the BepiColombo mission* *Supervisor*: Prof. A. Milani Comparetti
09/2007 – 10/2010	**Early Stage Researcher, AstroNet – Marie Curie RTN** Institut d'Estudis Espacials de Catalunya, Barcelona (Spain) *Dynamical systems tools applied to astrodynamics, numerical integration methods and their application to Solar System dynamics*
10/2009 – 01/2010	**Trainee at the European Space Operations Center (ESA–ESOC)** *Mission analysis for the Laplace mission*, Darmstadt (Germany)

Teaching Duties

10/2012 – 09/2015	Teaching Assistant in Spacecraft Orbital Dynamics and Control Master's degree in Aerospace Engineering Alma Mater Studiorum – Università di Bologna (Italy)

Supervision of MSc thesis, Ph.D. thesis

- Mentor for the Master of Science Program in Aerospace Engineering, Universidad Carlos III de Madrid, 2021.
- S. Molli, "Planetary and lunar navigation systems based on smallsat constellations", Industrial Ph.D. funded by CNR and CONFINDUSTRIA (XXXVI ciclo), in collaboration with Argotec s.r.l. and Sapienza Università di Roma, Department of Mechanical and Aerospace Engineering, 2020-2023.
- M. Lo Iacono, "Parametric design for Earth to Sun-Earth L_2 halo transfers in the circular restricted three body problem", Politecnico di Milano (Italy), Department of Aerospace Sciences and Technologies, Master of Science in Space Engineering, co-supervision, 2022-2023.
- E. Arikan, "Transfer trajectory and operational orbit selection for Earth-Moon L_2 near rectilinear halo orbits through invariant manifolds", Politecnico di Milano (Italy), Department of Aerospace Sciences and Technologies, Master of Science in Space Engineering, co-supervision, 2022-2023.
- V. Mariani, "Reentry from Libration Point Orbits: trajectory design and ground uncertainty", University of Pisa (Italy), Department of Mathematics, Master of Science in Mathematics, co-supervision, 2020-2021.
- Tiziana Talu, "Investigation on a doubly-averaged model for the Molniya satellite orbits", University of Pisa (Italy), Department of Mathematics, Master of Science in Mathematics, co-supervision, 2019-2020.
- Matteo Nicoli, "First Order Analytical Solution for Distant Retrograde Orbits in the CR3BP", Politecnico di Milano (Italy), Department of Aerospace Sciences and Technologies, Master of Science in Space Engineering, co-supervision, 2018-2019.

Referee for International Journals

Acta Astronautica; Advances in Space Research; Astronomy & Astrophysics; Astrophysics and Space Science; Celestial Mechanics and Dynamical Astronomy; Communications in Nonlinear Science and Numerical Simulation; Journal of Guidance, Control, and Dynamics; Journal of Spacecraft and Rockets; Journal of Space Safety Engineering; Planetary and Space Science; Scientific Reports; The Aeronautical Journal; The Journal of the Astronautical Sciences; The Planetary Science Journal, Universe.

Languages

Italian	mother tongue.
English & Spanish	excellent command of spoken and written language.
French & Catalan	basic knowledge.

HONORS & AWARDS

- **ERC Consolidator Grant 2023**: panel score B after step 2 of the evaluation process.
- **ERC Starting Grant 2019**: panel score A after step 2 of the evaluation process, not retained for funding due to budget limitations.
- Member of the **Science Team of the LUMIO mission**, 2024–2026.
- Member of the **Italian delegation of the Inter-Agency Space Debris Committee** (IADC), WG2, 2019–.
- **Co-organizer of the session "Satellite mega-constellations: problems and opportunities", national conference "towards a national capability of Space Surveillance"**, Bologna, October 6-7, 2022.
- Member of the **scientific committee of the International Workshop on Key Topics in Orbit Propagation Applied to Space Situational Awareness** (KePASSA), Logroño (Spain), June 22-24, 2022.
- **Chair of the organizing and scientific committees of the international workshop on Co-orbital Motion** (COOMOT), hybrid format, Milan, March 28-30, 2022 and COOMOT2, March 18-20, 2024.
- Member of the **Editorial Board of Astrophysics and Space Science – Springer**, 2023–2026.

- Member of the **Editorial Board of Scientific Reports – Nature**, 2022–.
- Member of the **Editorial Board of Advances in Computational Science and Engineering – AIMS**, 2022–.
- Member of the **Editorial Board of Universe – Space Science section**, 2020–2022.
- **Editor for Frontiers**, open-access platform. Editor and ideator of the research topic entitled "The Earth–Moon system as a dynamical laboratory", 2017–2019.
- **National Academic Qualification as Associate Professor** – aeronautic, aerospace and naval engineering (Abilitazione Scientifica Nazionale – Settore Concorsuale 09/A1 – II Fascia), 28/07/2017.
- Daquin, Rosengren, Alessi, Deleflie, Valsecchi and Rossi, Celest. Mech. Dyn. Astron. (2016) nominated by Springer Nature as **one of the 180 groundbreaking articles that could help change the world**, 2017. **Featured in Nature** 561, 24-26 (2018).
- **Asteroid (78309) 2002 PV65** designed "Alessielisa", 2014.
- **Founding member of SpaceDyS s.r.l.**, spin-off from the University of Pisa (Italy), 2011.
- **Marie Curie Early Stage Researcher Grant**: Marie Curie Research Training Network MCRTN FP6 CT-2006-03515 – the Astrodynamics Network "AstroNet", 2007–2010.
- **Ph.D. with European Mention** from the University of Barcelona (Spain), 2010.
- **Sponsorship by ESA** to attend the International Astronautical Conference IAC-08, 2008.
- **Best presentation award** at IAC-10, IAC-11, 1st IAA Conference on DYNAMICS AND CONTROL OF SPACE SYSTEMS 2012, IAC-13, IAC-17, IAC-19.
- **Membership**: International Astronomical Union, Società Italiana di Meccanica Celeste e Astrodinamica, Società Italiana di Scienze Planetarie, DANCE-NET: dinamica, atractores y nolinealidad, caos y estabilidad.

PARTICIPATION IN RESEARCH PROJECTS

2022 – 2023	**Radiation Environment Monitor for Energetic Cosmic rays (REMEC) mission**, ESA. Co-responsible for the mission analysis, phases A - B1.
2022 – 2023	**HEliospheric pioNeer for sOlar and interplanetary threats defeNce (HENON) mission**, ESA. Scientific advisor for the mission analysis for SpaceDyS s.r.l., phases A - B.
2020 – 2022	**Moto co-orbitale e regimi a tre corpi nel Sistema Solare**, Fondazione Cariplo, Promozione dell'attrattività e competitività dei ricercatori su strumenti dell'European Research Council: sottomisura Rafforzamento. Principal Investigator.
2016 – 2019	**ReDSHIFT: Revolutionary Design of Spacecraft through Holistic Integration of Future Technologies**, European Commission H2020-PROTEC-2015, PROTEC-1-2015 - Passive means to reduce the impact of Space Debris. Technical coordinator in WP3 "Dynamics" and WP6 "Software" for the CNR unit.
2016 – 2018	**Environmental aspects of passive de-orbiting devices**, ESA. Researcher.
2015 – 2016	**Improved NEO Data Processing Capabilities (P2-NEO-II)**, ESA. Researcher.
2013 – 2015	**Disposal strategies analysis for MEO orbits**, ESA/GSP. Researcher.
2013 – 2015	**Fragmentation consequence analysis for LEO and GEO orbits**, ESA/GSP. Researcher.
2013 – 2014	**End-of-life disposal concepts for Lagrange-Point and Highly Elliptical Orbit Missions**, ESA/GSP. Technical coordinator for the SpaceDyS unit.
2012 – 2014	**SPARC: Space Awareness for Critical Infrastructure**, European Union-Cips. Researcher.
2009 – 2014	**Mercury Orbiter Radioscience Experiment (MORE)**, ASI. Researcher.
2006 – 2011	**Métodos locales y globales en Sistemas Dinámicos. Aplicaciones**, Ministerio de Educación y Ciencia (Spain). Researcher.
2009 – 2010	**Dinámica, atractores y nolinealidad: caos y estabilidad**, Ministerio de Ciencia e Innovación (Spain). Researcher.
2007 – 2010	**The Astrodynamics Network "AstroNet"**, Marie Curie Research Training Network: MCRTN FP6 CT-2006-03515. Researcher.
2007 – 2008	**Efficient Usage of Self Validated Integrators for Space Applications**, ESA – The Advanced Concept Team. Ariadna Study 20783/07/NL/CB. Researcher.

INVITED TALKS

- Conference talk: "Natural eccentricity growth in Medium Earth Orbit due to the lunar perturbation as an Arnold diffusion process", 13th International Conference on Nonlinear Mathematics and Physics, NoLineal 2023, Barcelona, Spain, 23-26/6/2023.
- Conference talk: "Collision risk in space and current strategies", 7th Games and Decisions in Risk and Reliability Workshop, Madrid, Spain, 24-26/5/2023.
- Conference talk: "On the synergy between planetary sciences and space engineering in the study and exploitation of natural routes", XVIII Congresso Nazionale di Scienze Planetarie, Perugia, Italy, 8/2/2023.
- Conference talk: "Natural perturbations as allies for space debris mitigation and long-term sustainability: the case of the solar radiation pressure - oblateness coupled effect", 2nd International Stardust Conference, online, 8/11/2022.
- Workshop talk: "Criticality of space missions and orbital regions in the medium and long term", Verso una capacità nazionale di Sorveglianza dello Spazio, Bologna, 6-7/10/2022.
- Workshop talk: "A natural perturbation treatment of the Molniya orbital behavior, based on the TLE data set", KePASSA, Logroño (Spain), 22-24/06/2022.
- Conference talk: "The solar radiation pressure - oblateness coupled perturbation as an enabler for passive end-of-life solutions and long-term sustainability", XX Brazilian Colloquium on Orbital Dynamics, online, 09/12/2021.
- Conference talk: "Resonant dynamics of the coupled effect of solar radiation pressure and Earth's oblateness: modeling and exploitation for space debris mitigation", 2nd Online Conference on Nonlinear Dynamics and Complexity, 05/10/2021.
- Public talk at the event entitled "The Marie Sklodowska-Curie Alumni Association Italy Chapter and Italian Universities meet industrial and non-academic partners - Life outside academia", online, 20/05/2021.
- Research seminar: "Passive End-of-Life Solutions for Low Earth Orbits", Royal Melbourne Institute of Technology, Melbourne (Australia), 09/10/2017.
- Conference talk: "Dynamical mapping of the LEO region for passive disposal design", International Astronautical Congress, Adelaide (Australia), 26/09/2017.
- Conference talk: "On the semi-analytical formulation for the third-body perturbation at the boundary of the sphere of influence", KePASSA, ESTEC, Noordwijk (Netherlands), 26/07/2017.
- Workshop talk: "Earth's reentry solutions for LPO missions: design and application", CCT ORB, CNES, Toulouse (France), 04/07/2017.
- Conference talk: "Resonant Dynamics in the LEO Regions", Barcelona Mathematical Days, Societat Catalana de Matemàtiques, Barcelona (Spain), 28/04/2017.
- Lecture at international advanced school: "Environmental Criticality of LEO Objects", Third STARDUST Training School, Santander (Spain), 09/07/2015.
- Research seminar: "End-of-Life Disposal Concepts for Libration Point Orbit & Highly Elliptical Orbit Missions", Observatoire de Paris (France), 13/01/2014.
- Research seminar: "Orbit determination and parameter estimation for the Radio Science Experiment of the BepiColombo mission to Mercury", Universitat de Barcelona (Spain), 07/03/2012.
- Public lecture: "Alla scoperta di Mercurio", Planetario di Padova (Italy), 28/10/2011.
- Research seminar: "On the dynamics in the neighborhood of the collinear points in the CR3BP", Università degli Studi di Milano (Italy), 26/09/2011.
- Research seminar: "On the dynamics in the neighborhood of the collinear points in the CR3BP", Università degli Studi di Pisa (Italy), 07/12/2010.
- Research seminar: "LEO–Lissajous transfers in the Earth-Moon system and refinement to JPL ephemerides", Universitat de Barcelona (Spain), 07/04/2010.
- Public lecture: "Caos nel Sistema Solare", Gabinetto di Lettura e Società di Incoraggiamento, Padova (Italy), 05/03/2010.
- Research seminar: "Gravitational Capture at Callisto", Universitat de Barcelona (Spain), 10/02/2010.
- Lecture at international advanced school: "Numerical Integration Methods Applied to Astrodynamics and Astronomy", First AstroNet Training School, Barcelona (Spain), 17/09/2008.

PUBLICATIONS

h-index: 13 (WoS), 16 (Scopus), 21 (Google Scholar)

Peer-Review

- G.Ciacci, A. Barucci, S. Di Ruzza, E.M. Alessi, "Asteroid co-orbital motion classification based on Machine Learning", *Monthly Notices of the Royal Astronomical Society*, in press (2023).
- E. Fantino, et al., "End-to-end trajectory concept for close exploration of Saturn's Inner Large Moons ", *Communications in Nonlinear Science and Numerical Simulation* 126 (2023), 107458.
- M. Lombini, et al., "Solar Ultraviolet Light Collector for Germicidal Irradiation on the Moon", Scientific Reports 8 (2023), 8326.
- F. Ferrari, E.M. Alessi, "A new method for identifying dynamical transitions in rubble-pile asteroid scenarios", *Astronomy & Astrophysics* 672 (2023), A35.
- S. Molli, D. Durante, G. Boscagli, G. Cascioli, P. Racioppa, E.M. Alessi, S. Simonetti, L. Vigna, L. Iess, "Design and performance of a Martian autonomous navigation system based on a smallsat constellation", *Acta Astronautica*, 203 (2023), 112-124.
- S. Di Ruzza, A. Pousse, E.M. Alessi, "On the co-orbital asteroids in the solar system: medium-term timescale analysis of the quasi-coplanar objects", *Icarus*, 390 (2023), 115330.
- S. Huang, C. Colombo, E.M. Alessi, Y. Wang, Z. Hou, "Low-Thrust de-orbiting from Low Earth Orbit through natural perturbations", *Acta Astronautica*, 195 (2022), 145-162.
- A. Rossi, E. Vellutini, E.M. Alessi, G. Schettino, V. Ruch, J.C. Dolado Perez, "Environmental Index for fragmentation impact and environment evolution analysis", *Journal of Space Safety Engineering*, 9 (2022), 269-273.
- A. Pousse, E.M. Alessi, "Revisiting the averaged problem in the case of mean-motion resonances of the Restricted Three-Body Problem. Global Rigorous Treatment and Application to the co-orbital motion", *Nonlinear Dynamics*, 479 (2022), 959-985.
- T. Talu, E.M. Alessi, G. Tommei, "On the dominant lunisolar perturbations for the long-term eccentricity variation: the case of Molniya satellite orbits", *Universe*, 7 (2021), 482.
- J. Daquin, E.M. Alessi, J. O'Leary, A. Lemaitre, A. Buzzoni, "'Dynamical properties of the Molniya satellite constellation: long-term evolution of the semi-major axis", *Nonlinear Dynamics*, 105 (2021), 2081-2103.
- A. Petit, A. Rossi, E.M. Alessi, "Assessment of the collision risk for satellites in different configurations of large constellations", *Advances in Space Research*, 67 (2021), 4177-4192.
- F. Salazar, A. Alkhaja, E. Fantino, E.M. Alessi, "Science orbits in the Saturn-Enceladus circular restricted three-body problem with oblate primaries", *Acta Astronautica*, 180 (2021), 398-416.
- E.M. Alessi, A. Buzzoni, J. Daquin, A. Carbognani, G. Tommei, "Dynamical properties of the Molniya satellite constellation: long-term evolution of orbital eccentricity", *Acta Astronautica*, 179 (2021), 659-669.
- F. Salazar, E. Fantino, E.M. Alessi, "Observational properties of low-energy orbits around icy moons", *Acta Astronautica*, 178 (2021), 743-756.
- I. Gkolias, E.M. Alessi, C. Colombo, "Dynamical taxonomy of the coupled solar radiation pressure and oblateness effect and analytical deorbiting configurations", *Celestial Mechanics and Dynamical Astronomy*, 132 (2020), 55.
- A. Buzzoni, J. Guichard, E.M. Alessi, G. Altavilla, A. Figer, A. Carbognani, G. Tommei, "Spectrophotometric and dynamical properties of the Soviet/Russian Constellation of Molniya Satellites", *Journal of Space Safety Engineering*, 73 (2020), 255-261.
- E. Fantino, F. Salazar, E.M. Alessi, "Design and performance of low-energy orbits for the exploration of Enceladus", *Communications in Nonlinear Science and Numerical Simulation*, 90 (2020), 105393.
- A. Rossi, E.M. Alessi, G. Schettino, V. Schaus, G.B. Valsecchi, "How an aware usage of the long-term dynamics can improve the long-term situation in the LEO region", *Acta Astronautica*, 174 (2020), 159–165.
- E.M. Alessi, C. Colombo, A. Rossi, "Phase space description of the dynamics due to the coupled effect of the planetary oblateness and the solar radiation pressure perturbations", *Celestial Mechanics and Dynamical Astronomy*, 131:43 (2019).
- E.M. Alessi, J. Masdemont, A. Rossi, "Editorial: The Earth–Moon System as a Dynamical Laboratory", *Frontiers in Astronomy and Space Sciences*, 6:43 (2019).
- G. Schettino, E.M. Alessi, A. Rossi, G.B. Valsecchi, "A frequency portrait of Low Earth Orbits", *Celestial*

Mechanics and Dynamical Astronomy, 131:35 (2019).
- G. Schettino, E.M. Alessi, A. Rossi, G.B. Valsecchi, "Exploiting dynamical perturbations for the end-of-life disposal of spacecraft in LEO", *Astronomy and Computing*, 27 (2019), 1–10.
- V. Schaus, E.M. Alessi, G. Schettino, A. Rossi, E. Stoll,, "On the practical exploitation of perturbative effects in low Earth orbit for space debris mitigation", *Advances in Space Research*, 63 (2019), 1979–1991.
- E.M. Alessi, G. Tommei, I. Holbrough, G.Beck, "Dynamical uncertainty and demisability occurrence for the atmospheric reentry of SOHO", *Advances in Space Research*, 62 (2018), 3033–3047.
- A. Rossi, et al., "ReDSHIFT: a global approach to space debris mitigation", *Aerospace*, 5 (2018), 64.
- E.M. Alessi, G. Schettino, A. Rossi, G.B. Valsecchi, "Natural Highways for End-of-Life Solutions in the LEO Region", *Celestial Mechanics and Dynamical Astronomy*, 130 (2018), 34.
- G.B. Valsecchi, E.M. Alessi, A. Rossi, "Cartography of the b-plane of a close encounter. I. Semimajor axes of post-encounter orbits", *Celestial Mechanics and Dynamical Astronomy*, 130 (2018), 8.
- E.M. Alessi, G. Schettino, A. Rossi, G.B. Valsecchi, "Solar radiation pressure resonances in Low Earth Orbits", *Monthly Notices of the Royal Astronomical Society*, 473 (2018), 2407–2414.
- C. Bombardelli, E.M. Alessi, A. Rossi, G.B. Valsecchi, "Environmental effect of space debris repositioning", *Advances in Space Research* 60 (2017), 28–37.
- A.J. Rosengren, J. Daquin, E.M. Alessi, K. Tsiganis, F. Deleflie, A. Rossi, G.B. Valsecchi, "Galileo disposal strategy: stability, chaos and predictability", *Monthly Notices of the Royal Astronomical Society* 464 (2016), 4063–4073.
- E.M. Alessi, F. Deleflie, A.J. Rosengren, A. Rossi, G.B. Valsecchi, J. Daquin, K. Merz, "A Numerical Investigation on the Eccentricity Growth of GNSS Disposal Orbits", *Celestial Mechanics and Dynamical Astronomy* 125 (2016), 71–90.
- J. Daquin, A.J. Rosengren, E.M. Alessi, F. Deleflie, G.B. Valsecchi, A. Rossi, "The dynamical structure of the MEO region: long-term stability, chaos, and transport", *Celestial Mechanics and Dynamical Astronomy* 124 (2016), 335–366.
- S. Cicalò, G. Schettino, S. Di Ruzza, E.M. Alessi, G. Tommei, "The BepiColombo MORE gravimetry and rotation experiments with the ORBIT14 software", *Monthly Notices of the Royal Astronomical Society* 457 (2016), 1507–1521.
- G.B. Valsecchi, E.M. Alessi, A. Rossi, "An analytical solution for the swing-by problem", *Celestial Mechanics and Dynamical Astronomy* 123 (2015), 151–166.
- E.M. Alessi, J.P. Sánchez Cuartielles, "Semi-analytical Approach for Distant Encounters in the Spatial Circular Restricted Three–Body Problem", *Journal of Guidance Control and Dynamics* 39 (2015), 351–359.
- A. Rossi, G.B. Valsecchi, E.M. Alessi, "The Criticality of Spacecraft Index", *Advances in Space Research* 56 (2015), 449–460.
- E.M. Alessi, "The Reentry to Earth as a Valuable Option at the End-of-Life of Libration Point Orbit Missions", *Advances in Space Research* 55 (2015), 2914–2930.
- A.J. Rosengren, E.M. Alessi, A. Rossi, G.B. Valsecchi, "Chaos in navigation satellite orbits caused by the perturbed motion of the Moon", *Monthly Notices of the Royal Astronomical Society* 449 (2015), 3522–3526.
- A. Rossi, G.B. Valsecchi, E.M. Alessi, "Ranking in-orbit fragmentations and space objects", *Proceedings of the International Astronomical Union – Symposium 310*, 9 (2014), 118–125.
- C. Colombo, E.M. Alessi, W. van der Weg, S. Soldini, F. Letizia, M. Vetrisano, M. Vasile, A. Rossi, M. Landgraf, "End-of-life disposal trajectories for libration point and highly elliptical orbit missions", *Acta Astronautica* 110 (2014), 298–312.
- G.B. Valsecchi, E.M. Alessi, A. Rossi, "The geometry of impacts on a synchronous planetary satellite", *Celestial Mechanics and Dynamical Astronomy* 119 (2014), 257–270.
- E.M. Alessi, A. Rossi, G.B. Valsecchi, L. Anselmo, C. Pardini, C. Colombo, H.G. Lewis, J. Daquin, F. Deleflie, M. Vasile, F. Zuiani, K. Merz, "Effectiveness of GNSS Disposal Strategies", *Acta Astronautica* 99 (2014), 292–302.
- E.M. Alessi, G. Gómez, J.J. Masdemont, "A Methodology for the Computation of Constrained Orbits and its Application to the Design of Solar System Trajectories", *Journal of the Astronautical Sciences*, 59 (2012), 477–501.
- P. Pergola, E.M. Alessi, "Libration Point Orbits Characterisation in the Earth-Moon System", *Monthly Notices of the Royal Astronomical Society*, 426 (2012), 1212–1222.
- E.M. Alessi, S. Cicalò, A. Milani, G. Tommei, "Desaturation Manoeuvres and Precise Orbit Determination for the BepiColombo Mission", *Monthly Notices of the Royal Astronomical Society* 423 (2012), 2270–2278.
- E.M. Alessi, P. Pergola, "Two options for the Callisto's exploration", *Acta Astronautica* 72 (2012), 185–197.

- E.M. Alessi, G. Gómez, J.J. Masdemont, "Further Advances on Low – Energy Lunar Impact Dynamics", *Communications in Nonlinear Science and Numerical Simulation* 17 (2012), 854–866.
- E.M. Alessi, "The Role and Usage of Libration Point Orbits in the Earth – Moon System", Ph.D. Dissertation, Universitat de Barcelona (2010).
- E.M. Alessi, G. Gómez, J.J. Masdemont, "Low-energy transfers in the Earth–Moon system", Nonlinear Science and Complexity – Vol. II, Springer (2010), 107–114.
- E.M. Alessi, G. Gómez, J.J. Masdemont, "A Motivating Exploration on Lunar Craters and Low-Energy Dynamics in the Earth–Moon System", *Celestial Mechanics and Dynamical Astronomy* 107 (2010), 187–207.
- E.M. Alessi, G. Gómez, J.J. Masdemont, "Two-manoeuvres transfers between LEOs and Lissajous orbits in the Earth-Moon system", *Advances in Space Research* 45 (2010), 1276–1291.
- E.M. Alessi, G. Gómez, J.J. Masdemont, "Leaving the Moon by means of invariant manifolds of libration point orbits", *Communications in Nonlinear Science and Numerical Simulation* 14 (2009), 4153–4167.

Conference Proceedings

- L. Provinciali, et al., "HEliospheric pioNeer for sOlar and interplanetary threats defeNce (HENON) mission: Space weather monitoring and forecasting", *International Astronautical Congress IAC-23* (2023).
- R. Filgas, et al., "Deep space mission REMEC for GCR monitoring", *International Astronautical Congress IAC-23* (2023).
- E.M. Alessi, A. Pousse, S. Di Ruzza, "Averaged theory applied to the co-orbital motion of real asteroids in the solar system in the medium-term timescale", *European Planetary Science Congress* (2022).
- F. Ferrari, E.M. Alessi, "Dynamical transitions in the N-body granular problem to identify breakup limits of rubble-pile asteroids", *European Planetary Science Congress* (2022).
- S. Molli, L. Iess, E.M. Alessi, D. Durante, S. Simonetti, A. Sesta, "Martian user positioning via a semi-autonomous smallsat constellation", *44th COSPAR Scientific Assembly* (2022).
- E.M. Alessi, "A natural perturbation treatment of the Molniya orbital behavior, based on the TLE data set", *KePASSA2022* (2022).
- A. Pousse, M. Giralt, I. Baldomá, M. Guardia, E.M. Alessi, "An Arnold diffusion mechanism for the Galileo satellites", *KePASSA2022* (2022).
- B.M. Burhani, F. Solano, E. Fantino, R. Flores, M. Sanjurjo-Rivo, E.M. Alessi, "A Novel Trajectory Concept for a Mission to the Inner Large Moons of Saturn", *LPI Contributions 2686* (2022).
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