

Stefania Soldini

Curriculum Vitae

February 2024

📍 Department of Mechanical & Aerospace Engineering,
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Section 1 - Personal Details, Qualifications and Experience

1.1 Personal details

Name: Stefania Soldini
Address: Plas Geraint, Geraint, Llangollen, Wales, LL208AA
DOB: 22nd December 1986

1.2 Further/Higher Education

- 2012-2016 **Ph.D. in Astronautical Engineering, University of Southampton, Southampton (UK)**
Thesis title: "Design and control of solar radiation pressure assisted missions in the Sun-Earth system."
Supervisors: Dr. Scott J. Walker and Dr. Camilla Colombo
- 2009-2011 **Master Degree in Space Engineering, Polytechnic University of Milan, Milan (Italy)**
Thesis title: "ESMO attitude dynamics: propellant sloshing and mass expulsion torques."
Supervisors: Prof. Massimiliano Vasile and Prof. Franco Bernelli
- 2011-2011 **Visiting Student, University of Strathclyde, Glasgow (UK)**
Project: The European Student Moon Orbiter (ESMO) - European Space Agency (ESA)
- 2005-2009 **Bachelor Degree in Aerospace Engineering, Polytechnic University of Milan, Milan (Italy)**
Thesis title: "Simulation software development for a planetary rover navigation, guide and control: locomotion system analysis and wheel-soil interaction."
Supervisor: Prof. Michèle Lavagna

1.3 Any other relevant training and qualifications

- 2021-Present **Fellow of Higher Education Academy (HEA)**
Postgraduate Certificate in Academic Practice (Pass with Merit)
- 2012-Present **Professional Engineering Qualification, Ministry of University and Research (Italy)**
In the Italian law, graduates have to pass a State Exam (Esame di Stato),
in order to enrol as Charter Engineers.

1.4 Employment record

- 2022-Present **Senior Lecturer in Space Engineering, University of Liverpool (UK)**
Promoted October 2022
- 2023-2024 **Career break/Maternity leave (UK)**
From May 2023 - To Feb. 2024
- 2019-2022 **Lecturer in Space Engineering, University of Liverpool (UK)**
HoD requested confirmation in appointment one year early due to exceptional progress.
Confirmed in post since October 2021

- 2017-2019 *Aerospace Project Research Associate*, Hayabusa 2 Mission Flight Dynamics Team, Japan Aerospace Exploration Agency - JAXA (Japan)
Small body vicinity operations: PI of the Hayabusa 2 solar conjunction real-time operations (successfully executed in November-December 2018)
Supervisors: Dr. Takanao Saiki and Dr. Satoru Nakazawa
- 2016-2017 *Postdoctoral Fellow*, Japan Society for the Promotion of Science - JSPS, JAXA (Japan)
Project title: "Dynamics and control in near asteroid operations: application to the Hayabusa 2 mission
Supervisor: Prof. Yuichi Tsuda
- 2015-2015 *Early Stage Researcher (ASTRONET-II)*, Institut d'Estudis Espacials de Catalunya (IEEC), Barcelona (Spain)
Project title: "Design of transfer trajectories for solar sail missions in the Sun-Earth system"
Astronet-II is a Marie-Curie Research Training Network in Astrodynamics
Supervisors: Prof. Gerard Gomez and Prof. Josep J. Masdemont
- 2011-2012 *Test Software Engineer*, TXT E-Solution, Milan (Italy)
Expertise in area navigation and flight management systems.
Direct collaboration with the customer: Augusta-Westland

1.5 Teaching experience and activity

I believe my role as a lecturer is to provide a learning environment where the individual can thrive by providing learning activities that enable creativity and independence. I am adopting a flipped-classroom style of teaching providing extensive online resources to foster inquisitive self-directed learning, while organising active-learning activities in class to increase students' engagement and learning. My teaching is research-connected and my students acquire essential skills and confidence to then undertake a successful career in the space sector.

(a.) Module Co-Ordinator (2 modules)

- 2020-2022 **AERO419 - Space Mission Design, Navigation and Operations, Module Designer and Co-Ordinator**
Year 4 Aerospace programme (15cr, ca 21/31 Students)
- **EvaSys Average score: 4.7**
 - **Winner 2021/22 of the Learning, teaching and Student Experience Award (£500)**
 - **Peer-reviewed Article in Developing Academic Practice Journal** where AERO419 was the case study (reference [JPE 1])
 - AERO419 underwent curriculum board approval
 - The approach used was highlighted as best practice at a number of SSLC meetings
 - Invited by HoD to present AERO419 practice to academic staff at an MMA meeting
 - AERO419's Canvas page was used as a resource for the SoE's Canvas training for staff led by Mr T. Topping
 - Designed the syllabus and original resources in Canvas based on the Module Co-Ordinator industrial experience
 - Designed innovative Matlab grader coding exercises for interactive self-directed learning and Quiz
 - AERO419 was delivered as a MOOC and in hybrid format due to Covid restrictions
- 2020-2021 **AERO212 - Aircraft Performance A, Cover Teaching for the Module Co-Ordinator from Week 7**
Year 2 Aerospace programme (7.5cr, ca 106 Students)
- The module was delivered online due to Covid restrictions
 - The module required the development of resources:
Developed Lecture slides, online resources as Matlab grader coding exercises for interactive self-directed learning, Quiz and **Redesign of the Exam paper** with a Mock Exam session
 - **Responsible for Exam marking and Resit**
 - Students' feedback highlighted that the new resources given from Week 7 were helpful

(b.) Co-Teaching (2 modules)

2019-2020 *AERO420 - Aerospace Capstone Group Design Project*, Teaching, delivering 5cr.
Year 4 Aerospace programme (30cr, ca 34 Students)

- Supported the group teaching activities

2019-2020 *ENGG286 - Programming for Engineers 1*, Teaching, delivering 3.5cr.
Year 2 Mech and Aerospace programme (7.5cr, ca 157 Students)

- Delivered and designed the teaching material for Week 5,6,7, 10 and 12
- Supported the teaching of the practical sessions and marking
- Peer Observation 28/10/2019 by Dr. David Dennis. Positive feedback on the lesson planning
- Peer Observation 09/12/2019 by Prof. Rob Poole. Positive feedback on the use of technologies

(c.) Project Supervisor (21 students)

2021-2022 *ENGG443 - Advanced 4th Year Research Project*, Project Supervisor
Supervised 2 MEng students

2020-2022 *ENGG341 - Individual Project*, Project Supervisor
Supervised 12 Underground students

2019-2022 *ENGG660 - MSc (Eng) Project*, Project Supervisor
Supervised 7 MSc students

- Output: **One oral presentation with conference article** in proceedings of the AIAA Aerodynamics Specialist Conference in 2020. **The project was in collaboration with the French Space Agency (CNES)**

(d.) Module Moderator (2 modules)

2021-2022 *AERO319 - Spaceflight*, Moderator
Year 3 Aerospace programme (7.5cr, ca 68 Students)
Moderation of written exams

2020-2022 *ENGG286 - Programming for Engineers 1*, Moderator
Year 2 Mech and Aerospace programme (7.5cr, ca 157 Students)

(e.) Student Mentor (12 students)

2019-2022 *Year 1 and 2 Tutoring*, Mentor (ca 12 Students)

1.6 Leadership, professional and collegial experience

Internal

(a.) Committee Role (2)

2021-Present **STFC's North-West Space Cluster, Member of the University of Liverpool's Steering Group**

- Organiser: Research Partnerships and Innovation (RPI)
- Provided strategic input for successfully securing funding to the North-West Space Cluster
- Supporting RPI to launch an inter-faculty space research group
- Created a Microsoft Teams page for connecting academics whose research links to space sector
- Contacts: Prof. Ronan McGrath, Dr. Sonja Vujovic and Mr. Nick Doran

2019-Present **School of Engineering Athena Swan SAT Committee, SAT Member**

- Supported the School's Athena Swan Silver Application successfully awarded in 2021
- Supporting in the implementation of the Athena's action items plan

(b.) Student Recruitment Role (2)

2021-2022 **School of Engineering Open Days, Coordinator**

- Responsible for organising the School's open days. Responsible for the event organisation in conjunction with the Faculty's event. This was the first in person event after two years and new equipment was purchased (e.g., pop-up banners, table clothes and other)
- **Dean's Feedback:** *"I would like to thank you for your enthusiastic and innovative efforts in organising our Open Days. I felt that there was a high level energy and interest from visitors which was exciting to see."*

2021-2021 *University's Subject film for Aerospace Degree, Interviewee*

- Video titled: "Inside Aerospace Engineering: A conversation with Dr. S. Soldini and Dr. M. Jump"

(c.) Prestigious Invitations (2)

2022-2022 *EPSRC Annual Visit, Invited Participant*

2022-2022 *Science and Engineering Faculty Forum, Invited Speaker*

(d.) Internal Reviewer (1)

2022-Present **University of Liverpool Peer Review College, Reviewer**

- Internal reviewer for the UKRI FL Fellowship round 7
- Invited to share experience at the UKRI FL Fellowship round 7 applicants internal workshop

(e.) Academic Mentor (1)

2022-Present *University of Liverpool Mentoring Network, Academic Staff Mentor*

- Mentee: Dr. Martina Manes

(f.) Faculty Scholarship Funding (1)

2021-2021 *Faculty Enhancement Project, Co-applicant*

- Project title: *ORBITAL: student led miniature satellite project (£2,390)*
- Dr. A Waleed (EEE, project lead), Dr. K. Hoettges (EEE), Dr. D. McGuinness (EEE) and Dr. S. Soldini (SoE)

(g.) Other School Duties (2)

2022-Present *MMA Department Lecturer/Senior Lecturer Recruitment, Recruitment Interview Panel*

2021-2021 *School of Engineering's Away Day, Group Topic*

- Proposed and organised a group topic on "Setting a strategic plan for space engineering research"

External**(a.) External Thesis Examiner Role (3)**

2021-2022 *Ph.D. VIVA - Cranfield University, External Ph.D. Examiner*

- Candidate: Mr. Marco Zaccaria Di Fraia
- Thesis Title: "Exploiting Invariant-Oriented Perception for Robust Camera-Only Navigation in the Proximity of Near-Earth Objects"

2021-2022 *Ph.D. VIVA - University of Surrey, External Ph.D. Examiner*

- Candidate: Ms. Reem Algethamie
- Thesis Title: "Probability of collision for a newly generated debris cloud"

- 2020-2020 *M.Eng. Thesis Examination - Polytechnic University of Milan* , External M.Eng. Examiner
- Candidate: Mr. Claudio Bottiglieri
 - Thesis Title: "Proximity trajectory design for a CubeSat around binary asteroid Didymos"

(b.) Grant Reviewer (3)

- 2022-Present **EPSRC Connected Everything II call, Review Panelist**
- 2021-present **NASA's NSPIRES, Review Panelist**
NASA Solicitation and Proposal Integrated Review and Evaluation System
- Reviewed 30 proposals in the area of planetary science
 - Participated in a week of panel discussion and ranking of the proposals
- 2020-2020 **NASA's NSPIRES, Proposal Reviewer**
- Reviewed one research proposal in the area of Astrodynamics

(c.) Invited Editor (1)

- 2021-Present **Editorial Board for *Frontiers in Space Technologies Journal*, Guest Editor**
- Responsible in selecting the research topic, in selecting co-editors and of the overall special issue
 - Topic Title: "Advancing robotic exploration of asteroids and Comets: a threat, an opportunity, or both?"

(d.) Memberships (2)

- 2020-Present *Northern Space Consortium*, **Member**
- Connect the North's existing space industry and encourage collaboration and cooperation
- 2020-Present *Space University Network (SUN)*, **Member**
- Space Higher Education UK Network of Academics (SUN Website Link)

(e.) Journal Reviewer (14)

- 2018-Present *Reviewed 14 Original Journal Articles*, **Peer Reviewer**
- Acta Astronautica
 - Advances in Space Research
 - Developing Academic Practice, The Academy, Liverpool University Press
 - Icarus
 - Journal of Astronomy and Space Sciences
 - Journal of Guidance, Control, and Dynamics

(f.) Chaired Conferences (4)

- 2017-Present *Chaired Conferences*, **Invited Conference Session Co-Chair**
- 33rd International Symposium on Space Technology and Science, Online (2022)
 - 32nd International Symposium on Space Technology and Science, Fukui, Japan (2019)
 - 29th AAS/AIAA Space Flight Mechanics Meeting, Maui, HI (2019)
 - 26th International Symposium on Space Flight Dynamics, Matsuyama, Japan (2017)

1.7 Research experience and impact activity

Research contracts and awards (4)

Applied for 7 grants, 4 as PI and 3 as Co-I, from diverse funding bodies (UKRI, EPSRC, EU Horizon2020, Royal Commission for Exhibition, Leverhulme Trust, European Space Agency and DSTL) **with a total of £3.4M requested over a 2.5 years** period of service having **secured 2 grants with equivalent value of £1.97M and £15K from Research England Higher education Innovation Fund. Passed two University's internal selection rounds for the UKRI FL Fellowship round 6 and the Philip Leverhulme Prize.** The Leverhulme University's panel highlighted the following as strengths in support of the proposed Leverhulme application: **"(1) A strong publication record, with some key prestigious papers. (2) Involvement in 4 extremely large and particular (very specialised) projects at such an early stage in your career. (3) Strong track record in media appearances and outreach work – which is an important contribution to your field. Given your ability to communicate in so many and so different environments, the panel is sure you will be a prominent voice in your field."**

Secured Fundings

2026-2027	Priorities for Capital Equipment School of Engineering, PI
Project Title:	Robotic Spacecraft Simulator
Value:	€76K
2023-2024	SEPPOG S&E Faculty Funding & External Funding ESA PhD Studentship, PI
Project Title:	Detecting gravity anomalies in asteroids: application to Hera's radio science
Value:	€90.8K
Duration:	4 Years
2022-2023	Research England Higher Education Innovation Fund, PI
Project Title:	Talent and Research Stabilisation Fund 2022
Value:	£15K
Duration:	3 Months
2022-Present	UKRI Future Leaders Fellowship (Grant: MR/W009498/1), PI
Project Title:	REMORA - REndezvous Mission for Orbital Reconstruction of Asteroids: A fleet of Self-driven CubeSats for Tracing and Tagging Asteroids
Value:	£1.9M
Duration:	4+3 Years (renewal in year 4)
Other staff:	3 PDRAs and 1 PGR
Note:	Applications to R6 doubled compared to R5 (success rate 15%). The success rate for R6 dropped to 10% (84 funded projects out of 812 applications) Liverpool' success rate: 32 expressions of interest, 12 applicants supported, and 2 fellowships awarded.
2020-2021	EPSRC Connected Everything II (CEII/EPSRC Grant: EP/S036113/1), PI
Project Title:	Manufacturing of 3D-printed morphing origami solar sails for next generation of CubeSats
Value:	£60,000
Duration:	8 months
Other staff:	Ms. Aloisia Russo, Research Assistant and Dr. Paolo Paoletti, Co-I

Prizes and Awards (12)

2023	University of Liverpool's Alan Beeston Early Career Researcher of the year - UK
2022	University of Liverpool's Aurora Women in Leadership Programme Sponsorship (covers fees) - UK The Academy funded 2 places out of 40 applications
2022	University of Liverpool's Learning, teaching and Student Experience Award (£500) - UK

- 2021 **Faculty Enhancement Project Co-I, led by Dr. A. Waleed (£2,390)** - UK
 2021 **JAXA's Hayabusa 2 Honor Award** - Japan
 2018 CD9 Workshop's Travel Grant (30,000 ¥) - Japan
 2017 **JAXA's External Funding Acquisition Incentive (200,000 ¥)** - Japan
 2015 **Japan Society for the Promotion of Science (JSPS) Fellowship's Research Budget (400,000 ¥)** - Japan
 2014 Institution of Engineering and Technology's Travel Grant (£500) - UK
 2014 European Control Institute's Financial Support (500€) - France
 2013 **European Space Agency (ESA)'s Conference Sponsor** - Netherlands
 2012 MSc Thesis's **Pegasus Award** - Italy

Graduate and Postgraduate Students Supervised (34)

- 2024-present **PhD Student, Staff Primary Supervisor (1)**
- Mr. Henry Morten, University of Liverpool (SEPPOG S&E Faculty Funding & External Funding ESA)
 - Project Title: "Detecting gravity anomalies in asteroids: application to Hera's radio science"
- 2024-present **PhD Student, Staff Primary Supervisor (1)**
- Ms. Flavia Saveriano, University of Liverpool (SEPPOG S&E Faculty Funding/UKRI FLF)
 - Project Title: "Post-Impact Ejecta Dynamics in Binary Asteroids"
- 2023-present **Postdoctoral Researcher, Staff Primary Supervisor (1)**
- Dr. Xiaoyu Fu, University of Liverpool (UKRI FLF Grant: MR/W009498/1)
Responsible of annual PDR review
 - Project Title: "REMORA - REndezvous Mission for Orbital Reconstruction of Asteroids: A fleet of self-driven CubeSats for Tracking and Characterising Asteroids"
- 2020-2021 **Research Assistant, Staff Supervisor (1)**
- Ms. Aloisia Russo, MSc., University of Liverpool (CEII/EPSC Grant: EP/S036113/1)
 Responsible of her annual PDR review
 Published in *Frontiers in Space Technologies* [JP 5, CP 1]
 Now employed full time by Oxford Space System, our project partner
- 2018-2021 **PhDs, Thesis Co-supervisor (2)**
- Mr. Rob Bonar, University of Glasgow (CEII/EPSC Grant: EP/S036113/1)
 Project collaborators
 Published in *Frontiers in Space Technologies* [JP 5, CP 1]
 Presented our work at the 73rd International Astronautical Congress 2022 Conference [CP 1]
 - Dr Tommaso Pino, University of Rome - Visiting PhD student in JAXA, Co-supervisor (2018-2019)
 Supervisor: Prof. Yuichi Tsuda
- 2021-2022 **MEng Advanced 4th Year Research project, Project Supervisor (2)**
- Project Title: "Designing SailSat: a CubeSat Utilising a 3D Printed Origami Solar Sail for Propulsion and Attitude Control" (individual), sole supervisor, 2021-2022
 Student: Mr. Foley Benedict
 - Project Title: "Investigating the effect of radiation exposure on the thermo-mechanical properties and hardness of kapton backed 3D-printed Thermoplastic Polyurethane material" (individual), sole supervisor, 2021-2022
 Student: Mr. Joseph Lee
- 2021-2021 **EPSC Vacation Internship, Project Supervisor (1)**
- Ms. Ellen Brodie
 Project Title: "3D-printed Origami Solar Sails for Next Generation of CubeSats"

- 2020-2022 *BEng Individual Project*, Project Supervisor (12)
- Project Title: "Opensource web interface for an easy to understand online visualisation of ESA and NASA's Asteroid Database" (Group), sole supervisor, 2021-2022
Students: Mr. William Colbeck-Mutch, Mr. Thomas Drescher, Ms. Lily Gray, Mr. Kiera Hollomby, Ms. Laura Madaj and Mr. Lloyd Storm
 - Project Title: "3D-printed Origami Solar Sails for Next Generation of CubeSats" (Group), sole supervisor 2020-2021
Students: Mr. Robert Ariss, Mr. Samuel Axworthy, Mr. Foley Benedict, Mr. Joseph Lee, Mr. Raimond Minarro and Mr. Jack Piddock
- 2019-2022 *MSc (Eng) Project*, Project Supervisor (7)
- Project Title: "Planning a mission to Apophis in less than a decade" (Individual), sole supervisor, expected 2022
Student: Mr. Matthew Walthew
 - Project Title: "Large-scale Space Solar Power: 3D-printed Origami Solar Cells on Solar Sails" (Group), 2021
Co-supervisor Dr. Amanda Hughes
Students: Mr. Aravind Manimaran, Mr. Boli Wang, Mr. Ma'an Nazeer and Ms. Pelin Turk
 - Project Title: "Transfers from planar to 3D Quasi Satellite Orbits around Mars' moon Phobos: sensitivity analysis" (individual), sole supervisor, 2020
Student: Mr. Stefanos Charkoutsis (Output: Conference proceeding [CP 7])
 - Project Title: "Analysis of the Dynamics in Non-uniform density Asteroids" (individual), sole supervisor, 2020
Student: Mr. George Brooks
- 2018-2022 *MSc Students*, Thesis Supervisor (4)
- Mr. Aleksander Fiuk, TU Delft - Visiting student at the University of Liverpool, Online (2022)
Thesis title: "Temporary capture of regolith ejecta in binary asteroid systems on the example of 65803 Didymos"
 - Mr. Francesco Ventre, Polytechnic University of Milan - Visiting student at the University of Liverpool, Online (2022)
Thesis title: "Asteroid ejecta capture around binary systems: application to the DART mission"
 - Mr. Alessandro Latino, Polytechnic University of Milan - Visiting student in JAXA (2019)
Thesis title: "Ejecta orbital and bouncing dynamics around asteroid Ryugu"
Output: Conference proceeding
 - Mr. Daniel Villegas Pinto, TU Delft - Visiting student in JAXA (2018)
Thesis title: "Temporary Capture of Asteroid Ejecta into Periodic Orbits: Application to JAXA's Hayabusa 2 Impact Event"
Output: Conference proceeding
- 2018-2020 *MSc Internship Students*, Project Supervisor (2)
- Mr. Aleksander Fiuk, TU Delft - Visiting student at the University of Liverpool, Online (2020)
Project Title: "Conceptual feasibility study of control profile for origami-shaped solar sail folding"
 - Mr. Giacomo Acciarini, TU Delft - Visiting student in JAXA (2018)
Project Title: "Open source project for asteroid impact dynamics"

Impact case studies (4)

Science Team Membership as Astrodynamics Co-I of 3 international asteroid missions. I don't receive direct funding from NASA-DART, ESA-Hera and JAXA-Hayabusa2 projects but I provide in-kind support in the form of data analysis. ESA funds the spacecraft and operations, and the member states' National Space agencies fund the payload and science team. The same applies for DART-NASA and JAXA-Hayabusa2 for non-US and non-JP team members respectively. DART/HERA missions' data owned by NASA and ESA, which I have the authority to use. Admission to the team following the evaluation of a research plan:

1) **HERA Mission, European Space Agency (ESA), Netherlands (2020-Present).**

Role: Scientist

Responsibilities: gravity measurements and radio science around Didymos (binary asteroid) for the first two European CubeSats in deep space. Published impact peer reviewed articles (**REF2027**).

Science PIs: Dr. Michael Küpper and Dr. Patrick Michel

2) **DART Mission, NASA, USA (2020-Present).**

Role: Scientist

Responsibilities: DART is the first planetary defence-driven mission to test asteroid deflection with date of impact 26th of September 2022. In-charge of modelling the internal structure of Didymos. Published impact peer reviewed articles (**REF2027**).

Science PIs: Dr. Nancy Chabot and Dr. Andy Rivkin

Note: **The University of Liverpool is credited in the NASA's Media credits slide**

12 interview invitations for the DART's Impact Event: *BBC Radio Merseyside (committed), BBC Radio Kent (committed), CGTN Razor technology show (committed), BBC Breakfast TV, Times Radio, Guardian science weekly podcast, BBC News channel, BBC Radio Berkshire, CGTN TV Europe News London, BBC Radio 5, BBC North West Tonight and BBC World service radio.*

3) **Hayabusa 2 Mission, Japan Aerospace Exploration Agency (JAXA), Japan (2017-Present).**

Role: Scientist

Responsibilities: trajectory and operation planning around minor objects for radio science (gravity measurements). Published impact peer reviewed articles (**REF2021**) and expected articles (**REF2027**).

Science PIs: Prof. Makoto Yoshikawa

4) **PI of the Hayabusa 2 Mission's solar conjunction operations, Japan Aerospace Exploration Agency (JAXA), Japan (2018)**

Role: Flight dynamics engineer

Responsibilities: Designed the maneuver and the trajectory to control the Hayabusa 2 spacecraft around Ryugu asteroid. **Led a team of 15 researchers and engineering staff** during the conjunction real-time operations (senior engineers, PhD students and MSc students)

Project Manager: Prof. Yuichi Tsuda

1.8 Invitation to speak (9)

2023 (Planned)	Seminar European Space Agency (150€ plus travel) - Netherlands
2023/3 (Planned)	Aero/Astro Seminar, University of Southampton (travel costs) - UK
2022/11	Satellite Applications Catapult Panelist "Emerging Technology for Beyond Earth" (Webinar) - UK
2022/5	North-West Space Cluster Launch, STFC and UK Space Agency
2021/5	Institute for Geophysics and Planetary Physics Seminars, University of California Santa Cruz, online - USA
2020/05	CPD Webinar Italian Engineering Association of Monza (150€), Online - Italy
2019/09	Keynote Speaker European Space Agency (ESA)'s AIDA Workshop Rome (150€) - Italy
2019/05	Seminar Planetarium of Milan (100€) - Italy
2019/05	Aerospace Seminar, Polytechnic University of Milan - Italy

1.9 Industrial collaboration and knowledge exchange (4)

2022-Present	TXT E-Solutions, Milan, Italy, Collaboration Project: Collaboration with Digital Innovation Facility (DIF) for asteroid visualisation tool on VR wall Value: £3,000
2022-Present	Citadel Space Systems, Oxford, UK, Project Partner UKRI FLF Grant: MR/W009498/1 Value: £100,000
2020-2021	Oxford Space System, Oxford, UK, Project Partner CEII/EPSRC Grant: EP/S036113/1 Value: £10,000
2020-2020	French Space Agency (CNES), Toulouse, France, Collaboration Student Project: JAXA's Martian Moon Exploration (MMX) Mission Scope: Design of low-fuel cost manoeuvres around Phobos Value: £6,000

2020-2020 *iSpace, inc.*, Tokyo, Japan, **Consultancy**
 Duration: 4 months
 Value: **£6,000**
 Responsibilities: Worked on HAKUTO-R, iSpace's private lunar mission.
 Scope: Design of low-fuel cost manoeuvres for transfer trajectories to the Moon.

1.10 Other relevant activities

Prestigious international invitations (2)

26th September 2022 **Invitation to the NASA's DART Impact Operations, Johns Hopkins Applied Physics Laboratory, Maryland, USA** (*Unable to attend for health reasons)
 24th November 2021 **Invitation to the NASA's DART Mission launch, Vandenberg Space Force Base, CA, USA**

Media appearances (23)



Aug 2023 **BBC TV live News** interview on Virgin Galactic's first tourism flight.
 Sep 2022 **University of Liverpool's News** interview on DART's Mission Impact. Link 1- 2.
 The article was **reproduced in the Liverpool Echo**.
 The article was **highlighted in the UKRI Newsletter** October 10 2022.
 The article was **highlighted by Professor Dame Janet-Beer (Vice-Chancellor)** in the University Communications email of 14th October 2022.
 Sep 2022 **CGTN TV Razor Technology Show** interview on DART's Mission Impact.
 Sep 2022 **BBC Radio Kent** interview on DART's Mission Impact.
 Sep 2022 **BBC Radio Merseyside** interview on DART's Mission Impact.
 Sep 2022 Article in **The Conversation** on NASA's DART Mission (3.7K reads).
 Jul 2022 Institute of Space and Astronautical Science (JAXA)'s interview on challenges in space mission operations. Link
 Dec 2020 Interview in the Italian Newspaper **il Messaggero** on HY2 re-entry.
 Dec 2020 **BBC Radio 4 "Science in Action"** on Hayabusa 2 (HY2)'s re-entry.
 Nov 2020 Interview **Asknews** on HY2's extended mission phase.
 Nov 2020 Article in **The Conversation** on Space-based solar power stations (101K reads).
 Co-authored with Dr. Amanda Hughes
 The article was reproduced in the **Independent** and **BBC**
 Oct 2020 **The Manufacturer** featuring Dr Soldini's CEII feasibility study.
 Nov 2019 **BBC Radio 4 "Science in Action"** program on HY2 mission touchdown.
 Oct 2019 Interview from the Polytechnic of Milan's Alumni magazine **MAP**
 Sep 2019 Interview **Radio Beckwith** on HY2 Mission.
 Jul 2019 **Interview in Forbes** on HY2's SCI Experiment by Mr O'Callagan.

- Jun 2019 Interview in the Italian Newspaper il Messaggero.
 Feb 2019 Interview Askaneews, (Women In Science Day).
 Feb 2019 **Interview in the Italian Newspaper Corriere della Sera.**
 Jan 2019 Interview Radio Beckwith.
 Jan 2019 **Interview in the Italian National Institute of Astrophysics.**
 Dec 2018 HY2's conjunction operation news from HY2's twitter (@haya2e_jaxa).
 Oct 2018 **BBC Radio 4 "Science in Action" program on HY2's Minerva rovers.**

Outreach (15)

- May 2022 **Pathways to Engineering Talk**, Organiser Ms Chloe McElvaney, Liverpool, England
 Nov 2021 **Featuring in NASA's planetary defense campaign** (video)
 Nov 2021 High school Seminar "In viaggio su un asteroide" Istituto Maserati, Italy (Online)
 Jun 2021 Our Space Our Future (European Project) Year 9, Wrexham, Wales (Online)
 Jan 2021 High school Seminar "Spazio alla Conoscenza" IIS "Ciampini-Boccardo", Novi Ligure, Italy (Online)
 May 2020 Webinar STEM in the City. Event in response to covid19, Milan, Italy.
 Oct 2019 **UoL's LivWiSE, workshop to Year 9 Girls in STEM, Liverpool.**
 May 2019 Women in Science, Italian Newspaper Corriere della Sera's Workshop.
 Jan 2019 **Nishimachi International School, (7-8 years old), Tokyo, Japan.**
 Sep 2018 Tokyo Space Café organized by Prof. Elizabeth Tasker, Japan.
 Summer 2016-2018 **Supported 3 annual JAXA/ISAS's open campus, Japan.**
 Spring 2014 Astronautics Group outreach Y9, University of Southampton, England.
 Sep 2013 **ESA Outreach in a primary school during the IAC2013 Conference, Beijing, China.**

Continual professional development (69)

Obligatory training (25)

- 2nd Sep 2022 *Managing Safety at the UoL* (Human Resources)
 2nd Sep 2022 *Keeping Healthy, Safe and Well at UoL* (Human Resources)
 2nd Sep 2022 *Introduction to Diversity and Equality* (Human Resources)
 2nd Sep 2022 *GDPR and Information Security Essentials* (Human Resources)
 2nd Sep 2022 *Bribery Act 2010* (Human Resources)
 26th Jul 2022 *Research Ethics in Practice* (Epigeum)
 25th Jul 2022 *Research Integrity: Supplementary* (Epigeum)
 21st Jul 2022 *Research Integrity: Core* (Epigeum)
 20th May 2021 *PGCAP: HEA Fellowship* (Human Resources)
 16th Mar 2021 *PGCAP ADEV701 (Autumn Cohort) 2019 - 2020* (Human Resources)
 2nd Mar 2021 *PGCAP ADEV701 (Autumn Cohort) 2019 - 2020* (Human Resources)
 9th Feb 2021 *PGCAP ADEV701 (Autumn Cohort) 2019 - 2020* (Human Resources)
 26th Jan 2021 *PGCAP ADEV701 (Autumn Cohort) 2019 - 2020* (Human Resources)
 3rd Nov 2020 *PGCAP ADEV701 (Autumn Cohort) 2019 - 2020* (Human Resources)
 13th Oct 2020 *PGCAP ADEV701 (Autumn Cohort) 2019 - 2020* (Human Resources)
 22nd Sep 2020 *PGCAP ADEV701 (Autumn Cohort) 2019 - 2020* (Human Resources)
 16th Jun 2020 *PGCAP ADEV700 (Autumn Cohort) 2019 - 2020* (Human Resources)
 19th May 2020 *PGCAP ADEV700 (Autumn Cohort) 2019 - 2020* (Human Resources)
 17th Mar 2020 *PGCAP ADEV700 (Autumn Cohort) 2019 - 2020* (Human Resources)
 26th Nov 2019 *PGCAP ADEV700 (Autumn Cohort) 2019 - 2020* (Human Resources)
 20th Nov 2019 *Managing Safety at the UoL* (Human Resources)
 20th Nov 2019 *Bribery Act 2010* (Human Resources)
 20th Nov 2019 *Keeping Healthy, Safe and Well at UoL* (Human Resources)
 20th Nov 2019 *Introduction to Diversity and Equality* (Human Resources)
 20th Nov 2019 *GDPR and Information Security Essentials* (Human Resources)

Training in Education (7)

- 13th Sep 2021 CIE Workshop: Captioning and Accessibility (The Centre for Innovation in Education)
 23rd Jun 2021 Giving students the most from Canvas (The Centre for Innovation in Education)
 23rd Sep 2020 Canvas Fundamentals (The Centre for Innovation in Education)
 3rd Jun 2020 Canvas Advanced Training (The Centre for Innovation in Education)
 2nd Jun 2020 Space Universities Network Annual Workshop (SUN)
 27th Sep 2019 Student polling: review of different available tools (The Centre for Innovation in Education)
 20th Sep 2019 VITAL start to using BlackBoard (The Centre for Innovation in Education)

Career Development Training (26)

- 7th Nov 2022 Insight into Promotion - Reader (Human Resources)
 2th Nov 2022 Working with Media (UKRI FLF Development Network)
 26nd Oct 2022 Publishing in Nature Portfolio Journals (LiveWise)
 26nd Oct 2022 Insight into Promotion - Senior Lecturer (Human Resources)
 13th Sep 2022 The DIY Guide to Getting the Best Out of Yourself and Your Researchers (Prosper project)
 8th Sep 2022 Recruiting Your First Research Team (UKRI FLF Development Network)
 6th Sep 2022 FLF Development Mentor (UKRI FLF Development Network)
 28th Jul 2022 Leading with Emotional Intelligence (UKRI FLF Development Network)
 15th Jul 2022 FLF 360 feedback (UKRI FLF Development Network)
 13th Jul 2022 The Conversation one-to-one sessions (The Conversation)
 6th Jul 2022 The Conversation media training (The Conversation)
 15th Jun 2022 Careers Beyond Academia – A General Guide for PIs (Prosper project)
 18th-19th May 2022 UKRI FLF Cohort 6 Induction (UKRI FLF Development Network)
 13th Jul 2021 Proposal Writing Workshop (Andrew Derrington)
 22nd Oct 2021 Insight into Promotion - Senior Lecturer (Human Resources)
 12th Oct 2021 Insight into Promotion - Reader (Human Resources)
 23rd Mar 2021 Evaluation of ECA Coaching Programme for Resilience (Denise Chilton)
 25th Feb 2021 How to handle impact in EPSRC proposals (N8 Research Partnership)
 2nd Dec 2020 IP with Impact: Competitive Intelligence Seminar
 (Research, Partnerships and Innovation)
 26th Nov 2020 IP with Impact: Should you protect your innovations?
 (Research, Partnerships and Innovation)
 23rd Nov 2020 IP with Impact: Commercialisation Seminar - What does Industry want?
 (Research, Partnerships and Innovation)
 21st Sep 2020 Introduction to EPSRC Engineering Programme (EPSRC)
 19th Jun 2020 Explore the Prosper Portal - a new site supporting postdoc career development (The academy)
 12th Jun 2020 Stand out from the Crowd - Maximizing Your Personal Impact and Reputations (The academy)
 9th Jun 2020 Busting the Impact of Publications (The academy)
 2nd Jun 2020 Making an Impact: Managing project Delivery (The academy)

Subject Specialist Training (11)

- 20th Jun 2022 Research Showcase and Industry Engagement Event (Materials Innovation Factory)
 17th Jun 2021 Collaborative Research Workshops: Aerospace Engineering (UoL-XJTU)
 19th Mar 2021 A guide to additive manufacturing (3D printing) (IMECHE)
 16th Mar 2021 UK Space Agency Webinar (UKSA)
 25th Jun 2020 UK Space Sector COVID-19 Webiner (UKSA)
 23rd Jun 2020 UK Space Sector Webinar: Trade and Investment in the UK (UKSA)
 12th Jun 2020 An introduction to Earth Orbits (Astropreneurs)
 9th Jun 2020 Manufacturing in Space (Astropreneurs)
 25th May 2020 L2: Learning to use STK and Python together (AGI)

24th Mar 2020 L2: *Virtual STK Comprehensive Crash Course* (AGI)

23rd Mar 2020 L1: *virtual STK Fundamentals* (AGI)

Section 2 - Publications and submitted papers

ORCID ID: 0000-0003-3121-3845 

REF2021 Output: Three journals scored with 3 stars [JP 16, 17, 19].

I have an excellent track record of publications from 2013 and I have contributed to 26 top journals as *Science* (6) and *Nature Astronomy* (4), 8 as a main author, 3 ranked with 3 stars in REF2021 [JP 16, 17, 19], 42 conference proceedings (25 as presenter), 6 invited [CP 3-5, 11, 20, 29] and a book chapter. Moreover, I have published 1 article in education, recognizing my standing in the academic community. Summary of research impact for REF2021:

- 1) JP 16: The results of this work were proven in space with the real-time navigation of the Hayabusa2 spacecraft in late 2018. The data confirmed the novel control theory presented in this work in a never attempted before critical mission phase.
- 2) JP 17: This work is used by the NASA-DART mission and ESA-Hera mission to model the binary-asteroid Didymos and Dimorphos's gravity and internal composition. I am core science member of both missions since June 2020.
- 3) JP 19: The results of this work have secured CEII/EPSRC Grant in manufacturing (Ref: EP/S036113/1), March 2020. The fundamental theory in fuel-free control was used to prototype a novel self-reconfigurable spacecraft's device. Currently, invited to other grants as H2020 and CDT. My project partner, Oxford Space Systems, has the intention to apply for an Innovate UK with me to bring the prototype developed to commerce.

List of Authored Book Chapters (BC)

1. **Stefania Soldini**, Takeuchi, H, Taniguchi, S, Kikuchi, S, Takei, Y, Ono, G, Ohnishi, T, Saiki, T, Tsuda, Y, Terui, F, Ogawa, N, Mimasu, Y, Fujii, A, Nakazawa, S, Yamaguchi, T, Yoshikawa, K, Oki, Y, Hirose, C, Sawada, H & Yoshikawa, M. In *Hayabusa2 Asteroid Sample Return Mission* (eds Hirabayashi, M & Tsuda, Y) pp.241–257 (Elsevier, 2022). doi:<https://doi.org/10.1016/B978-0-323-99731-7.00013-1>. <https://www.sciencedirect.com/science/article/pii/B9780323997317000131>.

List of Additional Journal Publications (AJP)

1. **Soldini, S.** Hayabusa2 Mission Analysis Stefania Soldini. *Institute of Space and Astronautical Science (ISAS) JAXA News*. doi:https://www.isas.jaxa.jp/feature/hayabusa2/haya2_08.html (2018).

List of Refereed Journal Publications (Under Review)

1. Hirabayashi, M, Raducan, S, Sunshine, J & et.al. Kinetic deflection change due to target global curvature as revealed by NASA/DART. *Nature*, (under review). doi:10.21203/rs.3.rs-3598104/v1 (2024).
2. Song, Z, Yu, Y, **Soldini, S.**, Cheng, B & Michael, P. An integrated DEM code for tracing the entire regolith mass movement on asteroids. *Monthly Notices of the Royal Astronomical Society*, (under review) (2024).

List of Refereed Journal Publications in Education (JPE)

1. **Soldini, Stefania.** Hybrid-active e-learning techniques in remote master level astronautics courses: Using technology to enhance student learning. *Developing Academic Practice* **2023**, 49–69 (2023).

List of Refereed Journal Publications (JP)

1. Li, J, Hirabayashi, M, Farnham, TL & et.al. Ejecta from the DART-produced active asteroid Dimorphos. *Nature*, 452–456. doi:10.1038/s41586-023-05811-4 (2023).
2. Moreno, F *et al.* Characterization of the Ejecta from the NASA/DART Impact on Dimorphos: Observations and Monte Carlo Models. *The Planetary Science Journal* **4**, 138. doi:10.3847/PSJ/ace827. (2023).
3. Robb, B, Russo, A, **Stefania Soldini**, Paoletti, P, Reveles, J, Baillet, G & McInnes, CR. Integrated attitude and shape control for OrigamiSats with variable surface reflectivity. *Acta Astronautica* **211**, 393–404. doi:https://doi.org/10.1016/j.actaastro.2023.06.025. (2023).
4. **Soldini, Stefania**, Trigo-Rodriguez, JM, Hirabayashi, M, Moussi, A & Tsuda, Y. Editorial: Advancing robotic exploration of asteroids and comets: A threat, an opportunity, or both? *Frontiers in Space Technologies* **4**. doi:10.3389/frspt.2023.1173593. (2023).
5. Fahnestock, EG, Cheng, A, Ivanovski, S & et.al. Pre-Encounter Predictions of DART Impact Ejecta Behavior and Observability. *Planet. Sci. J.* **3**, 606. doi:10.3847/PSJ/ac7fa1/meta (2022).
6. Ferrari, F, Raducan, SD, **Soldini, S.** & Jutzi, M. Ejecta Formation, Early Collisional Processes, and Dynamical Evolution after the DART Impact on Dimorphos. *Planet. Sci. J.* **3**, 19pp. doi:10.3847/PSJ/ac7cf0 (2022).
7. Hirabayashi, H, Ferrari, F, Juzi, M & et.al. Double Asteroid Redirection Test (DART): Structural and Dynamic Interactions between Asteroidal Elements of Binary Asteroid (65803) Didymos. *Planet. Sci. J.* **3**, 20pp. doi:10.3847/PSJ/ac6eff (2022).
8. Richardson, D, Hgrusa, HF, Barbee, B & et.al. Predictions for the Dynamical States of the Didymos System before and after the Planned DART Impact. *Planet. Sci. J.* **3**, 23pp. doi:10.3847/PSJ/ac76c9 (2022).
9. Russo, A, Robb, B, **Soldini, Stefania**, Paoletti, P, Baillet, G, McInnes, CR, Reveles, J, Sugihara, AK, Bonardi, S & Mori, O. Mechanical Design of Self-Reconfiguring 4D-Printed OrigamiSats: A New Concept for Solar Sailing. *Frontiers in Space Technologies* **3**. doi:10.3389/frspt.2022.876585. (2022).
10. **Soldini, Stefania**, Saiki, T & Tsuda, Y. The probability analysis of ejecta particles damaging a spacecraft operating around asteroids after an artificial impact experiment: Hayabusa 2 's SCI operation safety study. *Frontiers in Space Technologies* **3**. doi:10.3389/frspt.2022.1017111. (2022).
11. Statler, TS, Raducan, S, Barnouin, OS & et.al. After DART: Using the first full-scale test of a kinetic impactor to inform a future planetary defense mission. *Planet. Sci. J.* **3**, 244. doi:10.3847/PSJ/ac94c1 (2022).
12. Tachibana, S *et al.* Pebbles and sand on asteroid (162173) Ryugu: In situ observation and particles returned to Earth. *Science* **375**, 1011–1016. doi:10.1126/science.abj8624. eprint: https://www.science.org/doi/pdf/10.1126/science.abj8624. (2022).
13. Yada, T, Okada, T & et al. Preliminary analysis of the Hayabusa2 samples returned from C-type asteroid Ryugu. *Nat Astron* **6**, 214–220. doi:10.1038/s41550-021-01550-6 (2022).
14. Kitazato, K, Milliken, R, Iwata, T & et al. Thermally altered subsurface material of asteroid (162173) Ryugu. *Nat Astron* **5**, 246–250. doi:10.1038/s41550-020-01271-2 (2021).
15. Sakatani, N, Tanaka, S, Okada, T & et al. Anomalously porous boulders on (162173) Ryugu as primordial materials from its parent body. *Nat Astron* **5**, 766–774. doi:10.1038/s41550-021-01371-7 (2021).
16. Tatsumi, E, Sugimoto, C, Riu, L & et al. Collisional history of Ryugu's parent body from bright surface boulders. *Nat Astron* **5**, 39–45. doi:10.1038/s41550-020-1179-z (2021).
17. Arakawa, M *et al.* An artificial impact on the asteroid (162173) Ryugu formed a crater in the gravity-dominated regime. *Science* **368**, 67–71. doi:10.1126/science.aaz1701. eprint: https://www.science.org/doi/pdf/10.1126/science.aaz1701. (2020).
18. Morota, T *et al.* Sample collection from asteroid (162173) Ryugu by Hayabusa2: Implications for surface evolution. *Science* **368**, 654–659. doi:10.1126/science.aaz6306. eprint: https://www.science.org/doi/pdf/10.1126/science.aaz6306. (2020).
19. **Soldini, S**, Takanao, S, Ikeda, H, Wada, K, Yuichi, T, Hirata, N & Hirata, N. A generalised methodology for analytic construction of 1:1 resonances around irregular bodies: Application to the asteroid Ryugu's ejecta dynamics. *Planetary and Space Science* **180**, 104740. doi:https://doi.org/10.1016/j.pss.2019.104740. (2020).
20. **Soldini, S.**, Takeuchi, H, Taniguchi, S & et al. Hayabusa2's superior solar conjunction mission operations: planning and post-operation results. *Astrodyn* **4**, 265–288. doi:10.1007/s42064-020-0076-7 (2020).
21. **Soldini, S.**, Yamaguchi, T, Tsuda, Y, Saiki, T & Nakazawa, S. Hayabusa2's Superior Solar Conjunction Phase: Trajectory Design, Guidance and Navigation. *Space Sci Rev* **216**. doi:10.1007/s11214-020-00731-5 (2020).

22. Takeuchi, H, Yoshikawa, K, Takei, Y & et al. The deep-space multi-object orbit determination system and its application to Hayabusa2's asteroid proximity operations. *Astrodyn* **4**, 377–392. doi:10.1007/s42064-020-0084-7 (2020).
23. **Soldini, S.**, Masdemont, JJ & Gomez, G. Dynamics of Solar Radiation Assisted Maneuvers between Lissajous Orbits. *Journal of Guidance, Control, and Dynamics* **42**, 769–793. doi:10.2514/1.G003725 (2019).
24. Sugita, S *et al.* The geomorphology, color, and thermal properties of Ryugu: Implications for parent-body processes. *Science* **364**, eaaw0422. doi:10.1126/science.aaw0422. eprint: <https://www.science.org/doi/pdf/10.1126/science.aaw0422>. (2019).
25. Watanabe, S *et al.* Hayabusa2 arrives at the carbonaceous asteroid 162173 Ryugu; A spinning top-shaped rubble pile. *Science* **364**, 268–272. doi:10.1126/science.aav8032. eprint: <https://www.science.org/doi/pdf/10.1126/science.aav8032>. (2019).
26. Watanabe, S *et al.* Hayabusa2 observations of the top-shape carbonaceous asteroid 162173 Ryugu. *Science* **364**, 268–272. doi:10.1126/science.aav8032. eprint: <https://www.science.org/doi/pdf/10.1126/science.aav8032>. (2019).
27. **Soldini, S.**, Colombo, C & Walker, S. Solar radiation pressure feedback control strategy for unstable periodic orbits in the restricted three-body problem. *Journal of Guidance, Control, and Dynamics* **40**, 1374–1389. doi:10.2514/1.G002090 (2017).
28. **Soldini, S.**, Colombo, C & Walker, S. The end-of-life disposal of satellites in libration-point orbits using solar radiation pressure. *Advances in Space Research* **57**. Advances in Asteroid and Space Debris Science and Technology - Part 2, 1664–1679. doi:<https://doi.org/10.1016/j.asr.2015.06.033>. (2016).
29. Colombo, C, Alessi, EM, van der Weg, W, **Soldini, S.**, Letizia, F, Vetrisano, M, Vasile, M, Rossi, A & Landgraf, M. End-of-life disposal concepts for Libration Point Orbit and Highly Elliptical Orbit missions. *Acta Astronautica* **110**. Dynamics and Control of Space Systems, 298–312. doi:<https://doi.org/10.1016/j.actaastro.2014.11.002>. (2015).
30. **Soldini, S.**, Bernelli-Zazzera, F & Vasile, M. Attitude Dynamics of ESMO Satellite: Mass Expulsion Torques and Propellant Slosh Model. *Aerotec. Missili Spaz.* **92**, 17–26. doi:10.19249/ams.v92i1-2.88 (2013).

List of Conference Proceedings (CP)

1. Ivanovski, S *et al.* Dust Dynamical Properties of the Dimorphos Ejecta Plume. In *AAS/Division for Planetary Sciences Meeting Abstracts* **55** (2023), pp.310.07.
2. Raducan, SD *et al.* Low Strength of Asteroid Dimorphos as Demonstrated by the DART Impact. *54th Lunar and Planetary Science Conference*, The Woodlands, Texas, 13–17 March 2023 (2023).
3. **Soldini, S.**, Ferrari, F, Li, JY, S., R & Zang, Y. Fate of the DART Impact Ejecta: Interpretation of the Tail Morphology Under the Effect of the Solar Radiation Pressure Acceleration. *54th Lunar and Planetary Science Conference*, The Woodlands, Texas, 13–17 March 2023 (2023).
4. **Soldini, S.**, Ferrari, F, Zhang, Y, Raducan, S & Jutzi, M. The effect of didymos internal structure on particle dynamics near its surface. *The 9th IAA Planetary Defense Conference*, Vienna, Austria, 15–19 April 2023 (2023).
5. Zhang, Y *et al.* Rubble-pile structural and dynamical evolution under YORP and the pathway to a binary system. In *AAS/Division of Dynamical Astronomy Meeting* **55** (2023), pp.500.02.
6. Bonar, R, Russo, A, **Soldini, S.**, Paoletti, P, Reveles, J, Baillet, G & McInnes, C. Integrated Attitude and Shape Control for OrigamiSats with Variable Surface Reflectivity. *73rd International Astronautical Congress*, IAC-22-C2.9.2, Paris, France, 18–22 September 2022 (2022).
7. Hirabayashi, M, Nakano, R, Zhang, Y & et al. NASA DART Impact on the Secondary of (65803) Didymos: Effects of Reshaping on Mutual Orbit Perturbation and its Geologic Implications. *American Geophysical Union (AGU) Fall Meeting*, Chicago, IL, 12–16 December 2022 (2022).
8. **Soldini, S.** Didymos internal structure. *HERA International Workshop*, Nice, France, 30 May–3 June 2022 (2022).
9. **Soldini, S.** Space research activities in the aerospace division of the University of Liverpool. *32nd Workshop on Astrodynamics and Flight Mechanics*, ISAS, JAXA, Online, 25–26 July 2022 (2022).
10. **Soldini, S.** & Ferrari, F. Ejecta dynamics following DART impact. *HERA International Workshop*, Nice, France, 30 May–3 June 2022 (2022).
11. Bonardi, S, Ozaki, N & **Soldini, S.** Robotic origami-inspired satellites for deep space exploration and colonization. In *43rd COSPAR Scientific Assembly. Held 28 January - 4 February* **43** (2021), pp.258.

12. Charkoutsis, S, Canalias, E & **Soldini, S.** Transfer between planar and 3D Quasi Satellite Orbits around Mars's moon Phobos: Application to JAXA's MMX Mission. *31st AIAA Astrodynamics Specialist Conference*, online, January 2021 (2021).
13. **Soldini, S.**, Russo, A, Paoletti, A & et. al. 3D-printed morphing origami solar sails for next generation of CubeSats. *Space Power Workshop*, online, 19–22 April 2021, (e-lightning talk) (2021).
14. **Soldini, S.**, Ferrari, F, Zhang, Y & et.al. The effect of NEAs Internal Structure on particle Dynamics: a way to search for stable orbits in the Didymos system. *The 7th IAA Planetary Defense Conference*, online, 26–30 April 2021, (e-lightning talk) (2021).
15. **Soldini, S.** Feasibility Study: Manufacturing of 3D-printed morphing origami sola sails for the next generation of CubeSats, Stefania Soldini, University of Liverpool. *Connected Everything II*, online, 21–22 July 2020 (2020).
16. **Soldini, S.**, Saiki, T, Ikeda, H, Wada, K, Arakawa, M & Tsuda, Y. A generalised methodology for analytic construction of 1:1 resonances around irregular bodies: Application to the dynamics around asteroid Ryugu. *30th Workshop on Astrodynamics and Flight Mechanics, Institute of Space and astronautical Science/JAXA*, online, 20–21 July 2020 (2020).
17. **Soldini, S.**, Saiki, T, Ikeda, H, Wada, K, Arakawa, M & Tsuda, Y. The effect of "MASCONS" Sphere Packing onto the Dynamical Environment around Rubble-Pile Asteroids: Application to Ryugu. *Europlanet Science Congress*, online, 21 Sep–9 Oct 2020, EPSC2020–808. doi:10.5194/epsc2020–808 (2020).
18. Villegas-Pinto, D, **Soldini, S.**, Tsuda, Y & Heiligers, J. Temporary Capture of Asteroid Ejecta into Periodic Orbits: Application to JAXA's Hayabusa2 Impact Event. *30th AIAA/AAS Space Flight Mechanics Meeting*, Orlando, Florida, 6–10 January 2020 (2020).
19. Bonardi, S, **Soldini, S.** & Ozaki, N. Next generation CubeSat: towards an origami based compliant modular system. *29th Workshop on Astrodynamics and Flight Mechanics, Institute of Space and astronautical Science/JAXA, Sagamihara, Japan*, 22–23 July 2019 (2019).
20. Bonardi, S, **Soldini, S.** & Ozaki, N. Towards an origami based compliant modular system for deep space exploration: the next generation of cubesat. *Planetary Exploration, Horizon 2061*, Toulouse, France, 11–13 September 2019 (2019).
21. Ikeda, H & et al. Hayabusa2's Astrodynamics Team. *13th Hayabusa2 Joint Science Team (HJST) Meeting, ISAS/JAXA, Sagamihara, Japan*, 30 Sept–1 Oct 2019 (2019).
22. Latino, A, **Soldini, S.**, Colombo, C & Tsuda, Y. Ejecta orbital and bouncing dynamics around asteroid Ryugu. *70th International, Astronautical Congress*, Washinton DC, United States, 21–25 October 2019 (2019).
23. Nakamura, T, Watanabe, S, Hirabayashi, M & et al. Hayabusa2: Current Summary. *82nd Annual Meeting of The Meteoritical Society*, Sapporo, Japan, 7–12 July 2019, LPI Contribution No. 2157, id.6306 (2019).
24. Scheeres, DJ, McMahan, JW, French, A, Brack, D, **Soldini, S.**, Baresi, N, Tsuda, Y, Lauretta, Ds & the OSIRIS-REx Team. Comparing the Dynamical Environments of Bennu and Ryugu. *32nd International Symposium on Space Technology and Science*, Fukui, Japan, 15–21 June 2019 (2019).
25. **Soldini, S.** & et al. Hayabusa2 Orbit determination in approach phase and the solar conjunction phase. *29th Workshop on Astrodynamics and Flight Mechanics, Institute of Space and astronautical Science/JAXA, Sagamihara, Japan*, 22–23 July 2019 (2019).
26. **Soldini, S.**, Tsuda, Y & Yamaguchi, T. Hayabusa2 Mission Solar Conjunction Phase for Hovering Satellite: Trajectory Design, Navigation and Post-Operation Evaluation. *29th AIAA/AAS Space Flight Mechanics Meeting*, Maui, HI, 13–17 January 2019 (2019).
27. **Soldini, S.**, Yamaguchi, T, Tsuda, Y & Saiki, T. Hayabusa2 Mission Solar Conjunction Operation. *32nd International Symposium on Space Technology and Science*, Fukui, Japan, 15–21 June 2019 (2019).
28. Watanabe, S, Hirabayashi, M & Hirata, N. High Porosity Nature of the Top-Shape C-Type Asteroid 162173 Ryugu as Observed by Hayabusa2. *50th Lunar and Planetary Science Conference*, The Woodlands, Texas, 18–22 March 2019 (2019).
29. Gomez, G, Masdemont, JJ, **Soldini, S.** & Xun., D. Solar Sail Assisted Maneuvers Near Libration Points. *XVII Jornadas de Trabajo en Mecanica Celeste*, Santiago de Compostela, Spain, 25–27 June 2018 (2018).
30. **Soldini, S.**, Tsuda, Y & Saiki, T. Dynamics of dust particles in the vicinity of Ryugu asteroid under the effect of solar radiation pressure: application to Hayabusa2 spacecraft operations. *9th Workshop on Catastrophic Disruption in the Solar System*, Kobe, Japan, 14–17 May 2018 (2018).
31. **Soldini, S.**, Yamaguchi, T & Tsuda, Y. Trajectory Design and Operations for Solar Conjunction during Hayabusa2 Hovering Phase. *28th Workshop on Astrodynamics and Flight Mechanics, ISAS, JAXA, Sagamihara, Japan*, 30–32 July 2018 (2018).

32. Farres, A, **Soldini, S.** & Tsuda, Y. JAXA's Trojan Asteroid Mission: Trajectory Design of the Solar Power Sail and its Lander. *The 4th International Symposium on Solar Sailing*, Kyoto, Japan, 17–20 Jan 2017 (2017).
33. **Soldini, S.** & Tsuda, Y. A Solar Radiation Pressure End-Of-Life Device for Libration Point Orbit Missions of the Sun-Earth System. *The 4th International Symposium on Solar Sailing*, Kyoto, Japan, 17–20 Jan 2017 (2017).
34. **Soldini, S.** & Tsuda, Y. Assessing the Hazard Posed by Ryugu Ejecta Dynamics on Hayabusa2 Spacecraft. *The 26th International Symposium on Space Flight Dynamics*, Matsuyama, Japan, 3–9 June 2017 (2017).
35. **Soldini, S.** & Tsuda, Y. Hayabusa2 Impact Experiment: Fate of the Asteroid Ryugu Ejecta. *The 5th IAA Planetary Defense Conference*, Tokyo, Japan, 15–19 May 2017 (2017).
36. **Soldini, S.**, Yamaguchi, T & Tsuda, Y. Preliminary, Design of Hayabusa2 mission operations during the solar conjunction communication blackout. *27th Workshop on Astrodynamics and Flight Mechanics, ISAS/JAXA*, Sagamihara, Japan, 24–25 July 2017 (2017).
37. **Soldini, S.** Design and Control of solar radiation pressure assisted Missions in the Sun-Earth system. *26th Workshop on Astrodynamics and Flight Mechanics, ISAS/JAXA*, Sagamihara, Japan, 25–26 July 2016 (2016).
38. **Soldini, S.**, Gomez, G, Masdemont, JJ, Colombo, C & Walker, S. Solar radiation pressure assisted transfers between Lissajous orbits of the Sun-Earth system. *67th International Astronautical Congress*, Guadalajara, Mexico, 24–30 September 2016, IAC-16.C1.6.13 (2016).
39. Colombo, C, Letizia, F, **Soldini, S.** & Renk, F. Disposal of libration point orbits on a heliocentric graveyard orbit: the Gaia mission. *25th International Symposium on Space Flight Dynamics, ISSFD*, Munich, Germany, October 2015 (2015).
40. **Soldini, S.**, Colombo, C & Walker, S. Solar radiation pressure end-of-life disposal for Libration-point orbits in the elliptic restricted three-body problem. *25th AAS/AIAA Astrodynamics Space Flight Mechanics Meeting*, Williamsburg, VA, 11–15 January 2015 (2015).
41. Colombo, C, Letizia, F, **Soldini, S.**, Lewis, H, Alessi, EM, Rossi, A, Vasile, M, Vetrivano, M, Van der Weg, W & Landgraf, M. End-of-life disposal concepts for libration point and highly elliptical orbit missions. *2nd International Academy of Astronautics Conference on Dynamics and Control of Space Systems (DYCOSS)*, IAA-AAS-DyCoSS2, Rome, Italy, 24–26 March 2014 (2014).
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43. **Soldini, S.**, Colombo, C & Walker, S. Comparison of Hamiltonian structure-preserving and Floquet mode station-keeping for Libration-point orbits. *AIAA/AAS Astrodynamics Specialist Conference*, AIAA-2014-4118, San Diego, California, 4–7 August 2014 (2014).
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