

Editorial: Student paper competition at the eleventh IAASS space safety conference, 'Managing Risk in Space' in 2021

Koller, Josef; Rongier, Isabelle; Skinner, Mark; van Campen, Julien

DOI

[10.1016/j.jsse.2022.05.002](https://doi.org/10.1016/j.jsse.2022.05.002)

Publication date

2022

Document Version

Final published version

Published in

Journal of Space Safety Engineering

Citation (APA)

Koller, J., Rongier, I., Skinner, M., & van Campen, J. (2022). Editorial: Student paper competition at the eleventh IAASS space safety conference, 'Managing Risk in Space' in 2021. *Journal of Space Safety Engineering*, 9(2), 125-126. <https://doi.org/10.1016/j.jsse.2022.05.002>

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Contents lists available at ScienceDirect

Journal of Space Safety Engineering

journal homepage: www.elsevier.com/locate/jsse

Editorial

Student paper competition at the eleventh IAASS space safety conference, 'Managing Risk in Space' in 2021



On behalf of the judging panel for the student paper competition at the Eleventh IAASS Space Safety Conference, 'Managing Risk in Space' we would like to announce the honorees; their papers are published in this issue. The conference was originally scheduled for May 2020 in Osaka. The conference was postponed due to the COVID pandemic to 2021 and later changed to a virtual technical meeting.

The International Space Safety Foundation (ISSF), the IAASS sister organization, is a non-profit organization (registered in the United States), dedicated to furthering industrial cooperation and scientific progress in the field of space safety. The ISSF seeks to train the next generation of space safety professionals and hope to promote safety education at the university level, particularly in conjunction with aerospace and astronautical education programs.

To advance these goals, the IAASS has published a series of books:

- Safety Design for Space Systems [1].
- Safety Design for Space Operations [2].
- Space Safety and Human Performance [3].
- Space Safety Regulations and Standards [4].

The Safety Design for Space Systems book has been translated into Chinese; a second edition is planned for later this year.

Nine years ago, the IAASS created the *Journal of Space Safety Engineering* published quarterly by Elsevier for the association. It as a peer-reviewed and indexed publication. Articles are available through Science Direct.

For the 'Managing Risk in Space' conference, the IAASS and ISSF created the Student Paper Competition to promote space safety education and university research in the field. The competition received 15 entries from university students in 9 countries, on 4 continents. The research in these papers addresses a range of concerns corresponding to the full diversity of disciplines within Space Safety.

The rules for the competition were to select five finalists among the entrants. Instead, the independent judging panel selected six, representing high caliber papers that they wished to recognize.

The finalists are as follows.

Mason Brown from Griffith University, Queensland, Australia presented a paper titled.

'DYNAMIC VERIFICATION OF SATELLITE SYSTEMS USING ILITIES' [5].

Christian Fusaro from the Politecnico di Milano in Milano, Italy presented a paper titled 'Interface between the long-term propagation and the destructive re-entry phases exploiting the overshoot boundary' [6].

Isabella R. Hatty from University of South Australia, Downer, ACT, Australia presented a paper titled 'Viability of On-Orbit Servicing Spacecraft to Prolong the Operational Life of Satellites' [7].

Micah Nishimoto from the University of Southern California in Los Angeles, California (USA) presented a paper titled 'Establishing Safety Requirements for Hyperloop Transportation Systems: Applying NASA Human Spaceflight Safety Practices'. This paper will appear in the September, 2022 issue of the *JSSSE*.

The judging panel selected two recognitions from among the finalists.

Newsha Haghgoo from the, University of Toronto, Canada presented a paper titled 'Safe spaceflight for women: Examining the data gap and improving design considerations' [8]. The jury felt that the student selected a particularly important research topic and performed a course of study to address this research topic in a scientifically formalized process and presented the results in the paper exceptionally well.

Adam Pagan from the University of Stuttgart in Stuttgart, Germany presented a paper titled 'Key Parameters governing the Ground Risk from Re-entering Pressure Vessel Debris' [9]. The jury selected this paper as the outstanding student paper at the conference. Pressure Vessels represent an important spacecraft component that survives reentry and this research addresses demisability upon reentry of these critical components. Additionally, the committee wanted to note that this student's research had both a theoretical and experimental components, providing a comprehensive understanding of this problem.

We want to express our gratitude to all of the students who participated in the conference and submitted their paper for consideration.

The ISSF and IAASS will continue the competition and offer cash awards to student honorees at the next IAASS conference, to be held in Osaka, Japan from 22 to 25 May 2023.

Declarations of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Josef Koller*
The Space Safety Institute, The Aerospace Corporation, USA

Isabelle Rongier
Ariane Group, Germany

Mark Skinner
The Aerospace Corporation, USA

Julien van Campen
Technische Universiteit Delft, the Netherlands

*Corresponding author.

E-mail address: josef.s.koller@aero.org (J. Koller)

References

- [1] G.E. Musgrave, A.S.M. Larsen, T. Sgobba, Safety Design for Space Systems, IAASS, 2008, doi:[10.1016/B978-0-7506-8580-1.X0001-2](https://doi.org/10.1016/B978-0-7506-8580-1.X0001-2).
- [2] F.A. Allahdadi, I. Rongier, P.D. Wilde, Safety Design for Space Operations, IAASS, 2013, doi:[10.1016/C2010-0-65559-3](https://doi.org/10.1016/C2010-0-65559-3).
- [3] T. Sgobba, B. Kanki, J.F.S. Clervoy, G. Mjeldheim, Space Safety and Human Performance, IAASS, 2018, doi:[10.1016/C2016-0-00319-4](https://doi.org/10.1016/C2016-0-00319-4).
- [4] J.N. Pelton, R.S. Jakhu, Space Safety Regulations and Standards, IAASS, 2011, doi:[10.1016/C2009-0-20288-1](https://doi.org/10.1016/C2009-0-20288-1).
- [5] M. Brown, S. Dey, G. Tuxworth, P. Bernus, P. de Souza, Dynamic verification of satellite systems using Ilities, J. Space Saf. Eng. 9 (2) (2022) 257–262, doi:[10.1016/j.jsse.2022.02.009](https://doi.org/10.1016/j.jsse.2022.02.009).
- [6] C. Fusaro, M. Trisolini, C. Colombo, Interface between the long-term propagation and the destructive re-entry phases exploiting the overshoot boundary, J. Space Saf. Eng. 9 (2) (2022) 174–181, doi:[10.1016/j.jsse.2022.02.008](https://doi.org/10.1016/j.jsse.2022.02.008).
- [7] I. Hatty, Viability of on-orbit servicing spacecraft to prolong the operational life of satellites, J. Space Saf. Eng. 9 (2) (2022) 263–268, doi:[10.1016/j.jsse.2022.02.011](https://doi.org/10.1016/j.jsse.2022.02.011).
- [8] D. Sharon, N. Haghgoo, K. Mankame, S. Mummigatti, A. Saadi, Safe spaceflight for women: examining the data gap and improving design considerations, J. Space Saf. Eng. 9 (2) (2022) 154–159, doi:[10.1016/j.jsse.2022.02.010](https://doi.org/10.1016/j.jsse.2022.02.010).
- [9] A. Pagan, G. Herdrich, Key parameters governing the ground risk from reentering pressure vessel debris, J. Space Saf. Eng. 9 (2) (2022) 189–200, doi:[10.1016/j.jsse.2022.04.002](https://doi.org/10.1016/j.jsse.2022.04.002).