



## CALL FOR PAPERS

### The 2023 AAS/AIAA Space Flight Mechanics Conference

### The LINE Austin Hotel – Austin, TX

### ABSTRACT DEADLINE: **Friday, September 30<sup>th</sup>, 2022**

The 2023 AAS/AIAA Space Flight Mechanics Conference will be held January 14 - 19, 2023 at the LINE Austin Hotel in Austin, Texas. This conference is organized by the American Astronautical Society (AAS) Space Flight Mechanics Committee and co-sponsored by the American Institute of Aeronautics and Astronautics (AIAA) Astrodynamics Technical Committee. Manuscripts are solicited on topics related to space-flight mechanics and astrodynamics, including but not necessarily limited to:

- Asteroid and non-Earth orbiting missions
- Atmospheric re-entry guidance and control
- Attitude dynamics, determination, and control
- Attitude-sensor and payload-sensor calibration
- Cislunar space missions and operations
- Cubesat and Smallsat missions
- Dynamical systems theory applied to space flight problems
- Dynamics and control of large space structures and tethers
- Earth orbital and planetary mission studies
- Flight dynamics operations and spacecraft autonomy
- Machine learning and artificial intelligence applied to space flight problems
- Orbital dynamics, perturbations, and stability
- Orbit determination and space-surveillance tracking
- Orbital debris and space environment
- Rendezvous, relative motion, proximity missions, and formation flying
- Reusable launch vehicle design, dynamics, guidance, and control
- Satellite constellations
- Spacecraft guidance, navigation, and control (GNC)
- Spacecraft autonomy and decision making
- Space Situational Awareness (SSA), Conjunction Analysis (CA), and collision avoidance
- Trajectory / mission / maneuver design and optimization

Manuscripts will be accepted based on the quality of the extended abstract, the originality of the work and/or ideas, and the anticipated interest in the proposed subject. Submissions based on experimental results, current data, or ongoing missions, are also of interest. Complete manuscripts are required before the conference. English is the working language for the conference.

#### COVID-19 CONSIDERATIONS

This conference is set to be in person, pending any COVID outbreaks. Please monitor the conference website for any updates. Attendees will be expected to monitor and follow all



conference guidelines, and any applicable local, state, and federal health advisories and regulations.

## SPECIAL SESSIONS

Proposals are being considered for suitable special sessions, such as a session theme and topical panel discussions. A proposal for a panel discussion should include the session title, a brief description of the discussion topic(s), and a list of the speakers and their qualifications. For a themed session, a proposal should include the session title, a brief description, and a list of prospective speakers and paper titles, if known. ***Prospective special session organizers should submit their proposals to the Technical Chairs by email by the abstract deadline.***

## BREAKWELL STUDENT PAPER AWARD

The AAS Space Flight Mechanics Committee announces the John V. Breakwell Student Paper Award. This award provides travel expenses for up to four (4) U.S. and Canadian students presenting at the conference. Students will receive monetary support (up to \$,1000) to attend the conference. The award applications have the same due date as the extended abstracts. Students wishing to apply for this award are strongly advised to submit their completed manuscript by the abstract deadline. Details and applications may be found on the conference website.

## INFORMATION FOR AUTHORS

The submission deadline is **Friday, September 30<sup>th</sup> 2022**, and notification of acceptance will be sent via email on or after October 28<sup>th</sup>, 2022. Detailed author instructions will be sent by email after acceptance. By submitting an abstract, the author affirms that the manuscript's majority content has not been previously presented or published elsewhere.

Authors may access the web-based abstract submittal system using the link available via the official website <http://www.space-flight.org>. During the online submission process, authors are expected to provide:

1. A paper title, as well as the name, affiliation, postal address, telephone number, and email address of the corresponding author and each co-author
2. An extended abstract in the Portable Document File (PDF) format of at least 500 words that includes the title and authors; provides a clear and concise statement of the problem to be addressed; the proposed solution method; the results expected or obtained; and an explanation of its significance to astrodynamics and/or space-flight mechanics, with pertinent references and supporting tables and figures as necessary. *The 500 word minimum length does not include title, authors, references, or figure captions.*
3. A condensed abstract (100 words) to be included in the conference program. This is directly typed into the text box provided on the web page and avoids the use of special symbols or characters, such as Greek letters.



Foreign contributors requiring an official letter of acceptance for a visa application should contact the Technical Chairs by email at their earliest opportunity following paper acceptance. Foreign contributors are also requested to plan their participation in accordance with any travel restrictions that may apply at the time of the conference.

**Technology Transfer Notice.** Technology transfer guidelines substantially extend the time required to review abstracts and manuscripts by private enterprises and government agencies. To preclude late submissions and withdrawals, it is the responsibility of the author(s) to determine the extent of necessary approvals prior to submitting an abstract.

**No-Paper/No-Podium Policy.** A complete manuscript must be electronically uploaded to the website prior to the conference in PDF format, be no more than twenty (20) pages in length and conform to the AAS manuscript format. If a complete manuscript is not received on time, then its presentation at the conference shall be forfeited. If a presentation is not made by an author at the conference, then the manuscript shall be omitted from the published proceedings.

We greatly appreciate the wide distribution of this announcement to other colleagues that may be interested, and we look forward to your participation.

Questions concerning the submission of manuscripts should be addressed to the technical chairs:

**AAS Technical Chair**

Dr. Sonia Hernandez  
Continuum Space Systems  
[sonia.hernandez@continuum-space.com](mailto:sonia.hernandez@continuum-space.com)

**AIAA Technical Chair**

Dr. Donghoon Kim  
University of Cincinnati  
[kim3dn@ucmail.uc.edu](mailto:kim3dn@ucmail.uc.edu)

All other questions should be directed to the General Chairs:

**AAS General Chair**

Dr. Daniel J. Scheeres  
University of Colorado Boulder  
[scheeres@colorado.edu](mailto:scheeres@colorado.edu)

**AIAA General Chair**

Dr. Rohan Sood  
The University of Alabama  
[rsood@ua.edu](mailto:rsood@ua.edu)