



CALL FOR CONTENT
The 2025 AAS/AIAA Space Flight Mechanics Meeting
Royal Sonesta Kaua'i Resort, Kaua'i, Hawaii
ABSTRACT DEADLINE: September 13, 2024

We have significantly revised the abstract submission requirements. We encourage prospective authors to carefully read the call for content, as the abstract submission requirements will be strictly enforced.

Primary changes to the requirements include:

- 1. Clear identification and description of the innovation behind the proposed technical work.**
- 2. A minimum of 1000 words for the extended abstract or draft manuscript. This must include well established methodology and a description of preliminary/expected results.**

The 2025 AAS/AIAA Space Flight Mechanics Meeting (SFM-2025) will be held January 19-23, 2025 at the Royal Sonesta Kaua'i Resort in Kaua'i, Hawaii. SFM-2025 is organized by the American Astronautical Society (AAS) Space Flight Mechanics Committee and the American Institute of Aeronautics and Astronautics (AIAA) Astrodynamics Technical Committee. Manuscripts and posters are solicited on topics related to space-flight mechanics and astrodynamics, including but not limited to:

- Asteroid and interplanetary mission and trajectory design
- Cislunar astrodynamics
- Atmospheric re-entry guidance and control
- Attitude dynamics, determination, and control
- Attitude-sensor and payload-sensor calibration
- Dynamical systems theory applied to space flight problems
- Earth orbital and planetary mission studies
- Machine learning and artificial intelligence applied to space flight problems
- Space autonomy and space robotics
- Orbital dynamics, perturbations, and stability
- Orbit determination and estimation
- Orbital debris and space environment
- Rendezvous, relative motion, proximity operations, and docking
- In-space assembly, manufacturing, and servicing
- Satellite constellations and formations
- Spacecraft guidance, navigation, and control (GNC)
- Space Situational Awareness (SSA) conjunction analysis and collision avoidance
- Trajectory / mission / maneuver design and optimization
- Low thrust trajectories
- Multibody dynamics and trajectory design



- History of space and future concepts

Submissions will be accepted based on the quality of the extended abstract or draft manuscript for oral presentations and of the quad chart for poster presentations, the originality of the work and/or ideas, and the anticipated interest in the proposed subject. Submissions that are based on experimental results or current data, or report on ongoing missions, are also of interest. Complete quad charts and manuscripts are required before the conference. English is the working language for the conference.

ORAL PRESENTATION SELECTION PROCESS

The extended abstracts or draft manuscripts will be reviewed by a team of reviewers appointed by the program committee. The conference chairs will inform the authors of the acceptance of their papers by November 1st, 2024. Instructions about preparing the extended abstract or draft manuscript to enhance the chances of acceptance are provided in the information for the authors.

POSTER SELECTION PROCESS

Posters are solicited for a special poster event. The submission will be done via quad charts that will be reviewed by a team of reviewers appointed by the program committee. The conference chairs will inform the authors of the acceptance of their poster by November 1st, 2024. Instructions about preparing the quad chart to enhance the chances of acceptance are provided in the information for the authors.

SPECIAL SESSIONS

Proposals are sought for suitable special sessions, such as themed sessions 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. Themed session speakers are expected to provide a full paper. Note that the abstracts considered for the Special Session shall be submitted through the Abstract submission system and individually accepted for oral presentations. Prospective special session organizers should submit their proposals to the Technical Chairs by September 2nd, 2024 and acceptance will be notified by November 4th, 2024.

BREAKWELL STUDENT PAPER AWARD

The AAS Space Flight Mechanics Committee selects 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 depending upon the conference format. 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

Oral Presentations

The extended abstracts submitted by the deadline of September 13th will be reviewed and considered for acceptance by the conference organizing committee. Notification of acceptance will be sent via email by November 1st. 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 applying to the oral presentations are expected to provide:

1. A paper title, as well as the name, affiliation, postal address, and email address of the corresponding author and each co-author.
2. An extended abstract or draft manuscript in the Portable Document File (PDF) format of at least 1000 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 spaceflight mechanics, with pertinent references and supporting tables and figures as necessary. The authors are requested to provide sufficient detail in the extended abstract or draft manuscript to aid the reviewers in making an accurate assessment of the potential of the contributions, the originality of the work and/or ideas, and the anticipated interest in the proposed subject.
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 indicate it on the abstract submission form and contact the Technical Chairs by email at their earliest opportunity following paper acceptance.

Posters for the Interactive Presentation Event.

The conference organizers are in active discussions with the venue administration to organize an interactive presentation event combined with a reception. A poster presentation event is being planned, which allows interactive exposition of ideas. The event will be outside of the regular presentation hours to maximize the number of participants and attendees. Please note that a paper cannot be submitted to both the poster event and an oral presentation. Submissions to the poster event will not require a conference paper publication. More details on the poster presentation will be made available on the conference website.

During the online submission process, authors applying to the poster presentation event are expected to provide:

1. A poster title, as well as the name, affiliation, postal address, and email address of the corresponding author and each co-author.
2. A quad chart in the form of a presentation slide in the Portable Document File (PDF) format with the following information:



- a. Background information
 - b. Innovation/relevance to astrodynamics
 - c. Method
 - d. Expected Results
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.

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-Presentation Policy. For abstracts submitted for oral presentation, a complete manuscript must be electronically uploaded to the website prior to the conference in PDF format. The manuscript shall be no more than twenty (20) pages in length and conform to the AAS manuscript format. MS Word and LaTeX templates for the AAS manuscript format will be made available on the conference website. If a complete manuscript is not received on time, then its oral 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.

Notice to the Authors Regarding Conference Proceeding. Papers accepted to the AAS/AIAA Space Flight Mechanics meeting will be invited for publication in the Springer Link Conference Proceedings. Authors are encouraged to submit their work to The Journal of the Astronautical Sciences (JASS) for archival publication. JASS expects to publish a special topics section directly tied with the 2025 AAS/AIAA Space Flight Mechanics meeting. Articles published in the JASS present significant new results, important insights, or state of the art surveys in all areas of astrodynamics, celestial mechanics, atmospheric flight mechanics, navigation and guidance, and space related sciences. Manuscripts will undergo a peer review process as outlined on <https://link.springer.com/journal/40295>.

Note that posters will not be published in the conference 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 abstracts/manuscripts, quad charts, and special session proposals should be addressed to the Technical Chairs:

AAS Technical Chair
Dr. Isabelle Jean
Canadian Space Agency
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AIAA Technical Chair
Dr. Kyle J. DeMars
Texas A&M University
[demars\(AT\)tamu.edu](mailto:demars(AT)tamu.edu)

All other questions should be directed to the General Chairs:



AAS General Chair
Dr. Maruthi R. Akella
The University of Texas at Austin
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AIAA General Chair
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