



Call for Papers

Thermal and Fluids Analysis Workshop (TFAWS) 2021

Location: Online Virtual Conference
August 24-26



Abstract submission deadline is July 2, 2021

The 2021 NASA Thermal and Fluids Analysis Workshop (TFAWS) includes presentations of original research and technical work. Paper sessions allow members of the thermal-fluids community to present their work to their peers. This meeting is an excellent opportunity to disseminate technical material within the community and is a valuable forum for discussion about applications and advancements within various disciplines.

During TFAWS 2021, paper sessions will be divided into the following topic areas: **Active Thermal/Fluids/Life Support, Passive Thermal, Aerothermal, Cryothermal, and Interdisciplinary**. Descriptions of these topics can be found below.

Active Thermal/Fluids/Life Support

- Active thermal systems and control: components, thermal systems, analysis and testing
- Fluids and CFD: analysis, design and test
- Life support: environmental control and life support systems
- Analytical model correlation to existing test or flight data

Passive Thermal

- Passive thermal systems and control: analysis, design, build, and test
- Spacecraft thermal protection systems including tiles, ablative systems, plume impingement, and ascent/entry aerothermal heat management
- Radiative heat transfer, including analytical and experimental approaches
- Studies related to multi-layer insulation (MLI), coatings, thermophysical or optical properties, and surface finishes
- Analytical model correlation to existing test or flight data
- Ground test, manufacturing processes and simulation

Aerothermal

- Aerothermodynamics: analysis, design, build, and test
- Aeroheating environments: ascent, on-orbit, re-entry
- Aerothermodynamic performance in planetary atmospheres
- Heating due to high speed flight and jet and rocket plume impingement
- Free molecular heat transfer, analytical and experimental approaches
- Analytical model correlation to existing test or flight data

Cryothermal

- Cryogenic system design: analysis, design, build, and test
- Cryogenic Fluid Systems
- Gas compression technologies
- Passive multistage cryogenic radiators

Interdisciplinary

- Multi-disciplinary problems: analysis, design, build, and test
- Fluid management and modeling techniques as applied to propulsion
- Vibration and acoustics in the launch environment
- Integrated analyses of chemical reactions, electromagnetic interactions, micromechanics and structural motion
- Modeling and testing error approximation and verification/validation techniques
- Technology innovations, current and in-development
- Creating environments of inclusion to enable innovation
- Lessons Learned

Abstract and Paper Submission Guidelines

You are invited to submit papers for presentation during the conference session. The **deadline for abstracts is July 2, 2021. Submissions should be sent to TFAWS2021_papers@jpl.nasa.gov**. You will be notified via e-mail of the acceptance of your abstract by July 10, 2021. **Presentations and/or manuscripts are due by August 11, 2021.**

Abstracts can be 200-1000 words and should include the following:

- A title and description of the paper or presentation to be submitted
- An indication of what is unique about the work
- An assessment of data, results and conclusions that are available
- A status of the state of the work (concept, development, testing, completed study)

In addition to the abstract, please specify the topic area for your submission (Active Thermal/Fluids/Life Support, Passive Thermal, Aerothermal, Cryothermal, and Interdisciplinary). Also, make sure the final paper and/or presentation will not include any export controlled (ITAR) material. *ITAR sessions will not be held.*

Manuscript and presentation templates will be provided to authors. While full papers are encouraged, they are not required to give a conference presentation. Typically, twenty minutes will be allocated for each presentation and ten minutes for questions from the audience. Instructions for electronic manuscript submission will accompany acceptance of the abstract. It is the author's responsibility to ensure that presentation content is not restricted by law, contract, or prohibited in any way from being presented at this conference.

Clearance/Copyright

Submitted work must be unclassified and approved for public release by the appropriate company and/or government agency. Please allot time for this authorization process. Government employees are expected to complete Document Availability Authorization (DAA) paperwork prior to final submission. The submission must be original work from the author(s) without any portion of the material infringing on any copyright.

Presenters are required to fill out **two** "TFAWS 2021 Clearance, Permission to Publish, & Permission to be Recorded" forms one for their abstract and one prior to their presentation. Both permission forms can be found on the TFAWS 2021 website.