

Call for Papers
Atmospheric and Space Environments

1. Atmospheric Hazards: Wake Vortices; Severe Weather; Atmospheric Turbulence; Wind Shear

- Fundamental aviation hazards such as aircraft wake vortices, severe and convective weather, atmospheric turbulence (CIT and CAT), wind shear, low ceilings, low visibility, obscurations or other obstructions to vision, such as volcanic ash and forest fires.
- Aviation safety and operations factors including weather accident prevention and improved concepts for measurement, prediction, and display of wake and weather hazards.
- Improved short-term forecasting of aviation hazards using numerical weather prediction models and observations for developing avoidance and mitigation procedures.
- Space weather.

For further details, contact Anthony Brown (Anthony.Brown@nrc-cnrc.gc.ca), or Z. Charlie Zheng (zzheng@ku.edu).

2. Observations and Modeling of the Atmospheric Environment

- Observations and characterization of the Earth's atmosphere using ground-based, airborne (manned and unmanned), and space-borne remote and *in situ* instruments.
- Design and testing of advanced instruments (satellite, airborne (manned and unmanned), and ground-based systems) including performance verification, validation and calibration of remote sensing instruments.
- Numerical weather prediction including meso- to micro-scale modeling and large eddy simulations of atmospheric processes. Topics include the development of new advanced modeling techniques as well as characterization of the atmospheric environment, especially for emerging aviation applications like unmanned aerial systems and urban air mobility.
- Environmental standards such as reference and standard atmosphere and other environmental models and their applications.

For further details, contact Matthias Steiner (msteiner@ucar.edu), or Fred Proctor (Fred.H.Proctor@nasa.gov).

3. Weather Impacts to the NAS: Capacity and Efficiency of NAS; Decision Support Tools; UAS Operations

- Impact of weather on the efficiency and capacity of the National Airspace System (terminal area and en-route environment).
- Decision support tools with integrated weather information for aviation operations.
- Communication of weather information to the flight deck, air traffic controllers, and the airline operators.
- Integration and use of environmental data in real or simulated operations.
- Atmospheric environment and UAS operations, including weather-related challenges for integration of UAS into the National Airspace System.
- Green aviation, including the assessment of the impacts of aviation on climate and air quality, atmospheric radiation studies, chemistry and contrail studies.

For further details, contact Matthew Pruis (matt@saqedata.science), or Matthias Steiner (msteiner@ucar.edu).

5. Atmospheric and Space Environments Student Paper Competition

Undergraduate and graduate students are encouraged to submit papers for consideration in the Atmospheric and Space Environments Student Paper Competition. Entries to the Student Paper Competition will be presented in regular technical sessions with other papers in their topic area and archived as AIAA papers. To be eligible for this award, the student must be an AIAA member or student member, the primary author of the paper, and in attendance at the conference to present the paper. In addition, all work must have been performed while the author was a student. The written papers will be judged based on the following criteria: (1) originality (is the work original, or is it something that has been addressed in the past); (2) technical quality (appropriate level of technicality and free of errors); (3) organization, completeness, grammar and usage (style and clarity); (4) literature review/acknowledgement of prior work and explanation of the relevance to the work presented in the paper; (5) accuracy of experimental or numerical results (ref. AIAA standards for journals); (6) importance/contribution to field. The student author of the best paper will receive a certificate and a cash award after the conference.

For further details, contact Nashat Ahmad (nashat.n.ahmad@nasa.gov), or David Thompson (dst@ae.msstate.edu).

Additional topics will be considered as appropriate. Please direct any questions to the Atmospheric and Space Environments Technical Discipline Chairs:

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