# Summary of the 19th Conference on Aviation, Range, and Aerospace Meteorology

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The 19th Conference on Aviation, Range, and Aerospace Meteorology was held from 7-10 January 2019 during the 99th AMS Annual meeting in Phoenix, Arizona. A range of session topics were offered and tailored to fall under the Annual Meeting's theme of "Understanding and building resilience to extreme events by being interdisciplinary, international and inclusive." ARAM conferences generally feature interdisciplinary research on sensing and predicting weather hazards that affect aviation, range, and aerospace operations in order to improve safety and efficiency of air travel.

Approximately 120 abstracts were submitted to the 19th ARAM Conference. In order to accommodate as many oral requests as possible, the conference was expanded to include a full 4th day. A diverse array of speakers presented on a range of topics. The diversity was evident in the number of international participants, including speakers from Japan, China, South Korea, UAE, Finland, France, and the UK. Despite the government shutdown, which impacted a large number of participants who were unable to travel, the meeting was still well attended with well over 100 audience members at peak times.

Each day was kicked off with a 30-minute invited talk. Matthias Steiner (NCAR/RAL) set the stage for the entire conference with an invited talk that peeked into the future needs of aviation weather services. The talk envisioned the weather support needs for an emerging form of public transit involving autonomous flying taxis. This forward-looking view was a common thread throughout the conference, which included two sessions (one of them joint with EIPT) on UAS weather sensing and prediction; a number talks discussing the use of machine learning and artificial intelligence to generate new and improved aviation weather products; and a general move toward much higher resolution turbulence-resolving modeling and a more broad use of ensemble

prediction and other methods for characterizing forecast uncertainty. Another highlight presentation was by Kent Tobiska (Space Environment Technologies) who presented an informative and illuminating review of the global aviation radiation environment. The radiation hazards Kent discussed exemplified the importance of interdisciplinary understanding of such hazards, which in this case span disciplines including solar physics, numerical modeling, engineering, medicine, and aviation operations.

Based on the thriving research on display at the 19th ARAM Conference, the sky is the limit for improved weather products that will increase safety and efficiency in the aviation, range, and aerospace sectors of society.