2021 Workshop: CONCERT

Long title
Grand Challenge: Coordinated Ground and Space-based Observations of the Ionosphere-Thermosphere System
Grand Challenge
Conveners
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Description

This workshop provides a forum for the community of investigators studying the thermospheric thermal, compositional, dynamic structures, and their interaction with the ionosphere using coordinated observations from ground- and space-based instruments, including GOLD, ICON and COSMIC-2. Contributions are welcome in the form of brief focused presentations. Of particular interest are investigations combining ground-based and space-based observations, opportunities for campaigns, and/or proposals for coordinated ground- and space-based instruments. The sessions will include time for open discussion assessing progress and discussing future directions. The workshop provides a forum for sharing what was learned from each campaign, but the primary goal of that activity is to help refine plans for the following year and present new scientific insights from previous campaigns.

Justification

Although the observations and scheduling of both the ground and space-based observatories are largely predetermined, some flexibility exists. For example, the GOLD instrument has 2 channels, one of which can meet its science requirements, allowing the second to be used, at least in-part, for observational campaigns, if sufficient planning in advance is done to generate the observational sequence and upload to the spacecraft. The ICON mission will have some flexibility in its calibration schedule, which could be adjusted based on input from the ground-based community to optimize collocated observations. It is also important to coordinate observing times with ground-based observations that do not operate continuously (i.

e., ISRs). Multiple workshops are needed in order to first share this information, learn what can be done, and what can’t; second, have sufficient time to plan and execute coordinated campaigns; and third, to report back on coordinated campaigns and scientific findings. Further, the scientific challenges outlined cannot be fully and adequately addressed by individual instruments, but can by coordinated, well planned space and ground-based observations, with theoretical studies. The scope of the activity is beyond individual regular CEDAR workshop.

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