2025 Workshop: GEM-CEDAR Ionospheres

Long title
Comparative Planetary Ionospheres
CEDAR-GEM
Conveners
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Description

The ionosphere is a rich system with various physical and chemical processes responsible for the coupling between the upper atmosphere and the magnetosphere. Historically, the focus has been on Earth's ionosphere because of the societal impacts of space weather and the relative accessibility of the Earth. Now there are ever increasing remote and in situ observations of the other planets and Earth's ionosphere. These include the ionospheres of Earth, Mars, Venus, Jupiter, Saturn, Large (i.e. Galilean) Moons, and studies of Exoplanets. In this session, we look to increase our understanding of various ionospheres and the fundamental processes controlling them. We propose a mixed format session that blends scene-setting presentations with a small number of contributed talks and ample time devoted to an open discussion of the various planetary ionospheres. We welcome discussion on both observations and modelling of these ionospheres.

Justification

The recent Solar and Space Physics Decadal Survey highlighted the study of ionospheres on other words as a longer-term goal for NASA's heliophysics research. Understanding of the ionospheres on other planets will increase our knowledge of the fundamental physics and chemistry, which will improve the modeling of these

systems for both Earth and other planets. The GEM-CEDAR communities provide a forum where these diverse communities come together to discuss such topics.

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Comparative Planetary Magnetospheric Processes (COMP), George Clark

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