2019 Workshop: Thermosphere and Ionosphere

Long title
Variations in thermospheric density, temperature and compositions and their impact on the ionosphere
Conveners
Yongliang Zhang
Larry Paxton
Sam Yee
Gang Lu
Description

Thermospheric conditions (compositions, temperature, and density) change significantly due to energy and momentum inputs from above (solar EUV, particle and Joule heating in high latitudes, ion drag) and below (lower atmosphere waves, such as tides). There are also feedback effects among composition, temperature and wind variations (e.g. enhanced nitric oxide and changed atomic oxygen cool the thermosphere). Traveling atmospheric disturbances (TAD) and associated traveling ionospheric disturbances (TID) are often observed during geomagnetic storm and non-storm times. These variations directly and indirectly alter ionospheric structures through ion-neutral coupling, and thus can potentially impact satellite operations and telecommunications. We welcome short presentations on thermospheric composition variations on various temporal and spatial scales, as well as changes in other neutral and ionospheric parameters associated with these variations (based on observations and/or model simulations) and related operational impacts

Justification

The ionosphere and thermosphere (IT) continue to be one of the focuses in the space weather nowcast and forecast. New observations and modeling capabilities improve our scientific understanding as well as accuracy in IT prediction. It is a great opportunity to review these progresses at CEDAR annual workshop.

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