2014 Workshop: neutral winds

Long title
Thermospheric wind variations and their interaction with the ionosphere
Conveners
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Description

The workshop welcomes short, focused presentations, typically comprised of 5 slices or so of the following topics related to neutral winds in the upper thermosphere (above ~200 km): solar cycle, seasonal and diurnal variations; neutral wind structure of different temporal and spatial scales; storm-time behavior of neutral winds and related ionospheric effects; the neutral wind dynamo and its variations; transport by neutral winds including vertical winds; and ion-neutral coupling. Presentations relating to both observations and modeling are welcome.

Justification

A full understanding of the behavior of the thermospheric wind circulation is of fundamental importance to advancing our overall knowledge of the change of the global thermosphere and ionosphere system under various geophysical conditions, especially during geomagnetic storms. However, the changes of the global thermospheric wind circulation and the way that they affect ionospheric variations are still poorly understood. This is related in part to the shortage of global wind observations. Such observations are essential for first principles modeling of the physical processes that drive the changes of the winds. This workshop aims to assess our current understanding of the thermospheric winds, the processes that drive them, and their interaction with the ionosphere. The goal of this workshop is also to discuss collaborative observational and modeling studies. The workshop directly addresses CEDAR Strategic Thrust #1 (systems perspective to geospace). It also addresses Science Goal #2 of the National Research Council’s Decadal Survey report for Solar and Space Physics: determine the dynamics and coupling of Earth’s magnetosphere, ionosphere, and atmosphere and their response to solar and

terrestrial inputs.

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