2012 Workshop: PINOT Kick Off

Long title
PINOT - PFISR Ion Neutral Observations in the Thermosphere
Conveners
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Description

PINOT is a proposed campaign for studying ion-neutral coupling in the thermosphere using a variety of experimental techniques and models. We propose to advance understanding ion-neutral coupling through a coordinated campaign of observations and modeling using the Poker Flat Incoherent-Scatter Radar (PFISR), the Resolute Bay Incoherent-Scatter Radar (RISR), a variety of optical instruments, the Super Dual Auroral Radar Network (SuperDARN), the Homer VHF radar, and the Global Ionospheric-Thermospheric Model. This workshop will serve as a kick-off for the campaign and will be focused on planning for the upcoming observing season.

Justification

Near-Earth space at auroral latitudes is where the majority of solar wind energy couples to the Earth’s upper atmosphere. The coupling comes through the interaction of ions and electrons with the neutral gas, which occurs at the atomic level when the fast-moving charged particles driven by electric fields of magnetospheric origin collide with the neutral atoms and molecules. This interaction drives neutral winds, heats the gas, and generates waves and turbulence. The interaction and its results are dynamic and complex, and only partially understood. Developing a more complete understanding of the interaction and associated phenomena is the objective of the majority of the aeronomy community. It directly addresses many aspects of the CEDAR strategic plan.

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