

SEMINAR NOTICE

*Department of Physics and Engineering Physics
University of Saskatchewan*

SPEAKER: Dr. Sasha Koustov
Department of Physics & Engineering Physics

TOPIC: *Transpolar electric potential as a parameter characterizing the near-Earth's space*

DATE: Tuesday, January 19th, 2016

TIME: 3:30-4:30pm.

PLACE: Rm. 103, Physics Building

ABSTRACT:

As the solar wind plasma flows around the Earth, a quasi-steady electric field directed from dawn to dusk and related electric transpolar potential are established across the high-latitude ionosphere. The transpolar potential is a measure of the energy of the global-scale plasma circulation system and is therefore a critical parameter characterizing the Sun-Earth connection.

Despite years of efforts, physical processes leading to the onset of the transpolar potential are poorly understood. Proposed analytical theories and results of computer modeling are not consistent; experimental information on the transpolar potential is crucial for further progress in this field. In my presentation I will quickly review methods of transpolar potential measurement and describe how it is related to other parameters of the near-Earth space. The emphasis will be on results obtained with the HF SuperDARN radars and with ion drift meters onboard the Defense Meteorological Satellite Program (DMSP) satellites. I will focus on major discrepancies between the data from these instruments themselves and theoretical models, especially whenever extreme "space weather" conditions are considered.

Coffee and Cookies will be served in the Physics lounge at 3:00 pm. for those attending the seminar.