

Space Physics Seminar

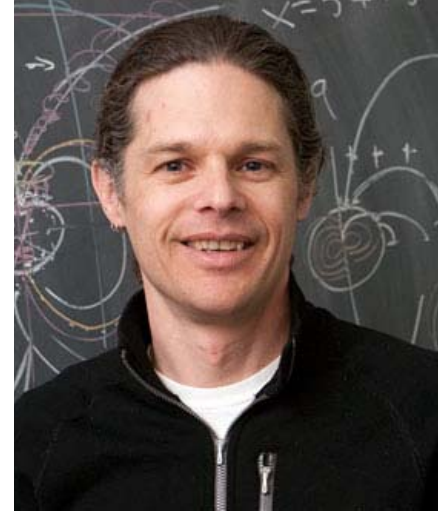
Thursday, January 25, 2018

Simon Shepherd

Thayer School of Engineering - Dartmouth College

SuperDARN Convection Electric Field Climatology

The Super Dual Auroral Radar Network (SuperDARN) is an array of more than 30 scientific HF radars that measure Doppler parameters of the drifting plasma over large regions of the Earth's polar ionosphere. In the past decade the network has undergone significant expansion to polar and mid-latitude regions. The new radars produce measurements that give a more complete description of plasma transport, particularly under geomagnetically disturbed conditions.



In particular, statistical or climatological patterns of ionospheric convection have previously been derived using only measurements from the high-latitude SuperDARN radars [Ruohoniemi and Greenwald, 1996; Ruohoniemi and Greenwald, 2005; Pettigrew et al., 2010; Cousins and Shepherd, 2010]. These patterns are limited to conditions in which the convection region is confined to above ~ 60 degrees in geomagnetic latitude. A new model of statistical convection has been developed by using measurements from all SuperDARN radars, including those at polar and mid-latitudes. The new patterns represent significant improvements in terms of the equatorward extent of the convection region (~ 50 degrees), the strength of the polarcap flows and the structure of the convection on the nightside under most conditions.

4:00pm in CAS 502. *Refreshments to follow in CAS 500.*

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Next Week

Michael Mendillo
BU CSP