



GPS ionospheric scintillation and HF radar backscatter – A comparison between GISTM network and SuperDARN at high latitudes

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The occurrence of GPS ionospheric scintillation at high latitudes over Scandinavia in 2003 and 2008 is compared with the occurrence of HF radar backscatter from field-aligned irregularities as a function of magnetic local time and geomagnetic latitude for the same two years. The scintillation was observed using GPS Ionospheric Scintillation and TEC Monitors (GISTM) included in a network extending from high to mid latitudes. Both the HF radar backscatter and GPS scintillation predominantly occur in the night portion of the auroral oval and the ionospheric footprint of the cusp. Data subsets for geomagnetically quiet and disturbed periods show the expected shift in latitude of the ionospheric regions both in the occurrence of phase scintillation and the HF radar backscatter from ionospheric irregularities.