Ionospheric frequency sounding experiments with SuperDARN HF radars: First results

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1 Extended Abstract

The Super Dual Auroral Radar Network (SuperDARN) is an international network of more than 30 ground-based, high-frequency (HF) space weather radars which continuously monitor the line-of-sight Doppler velocity of plasma irregularities at E- and F-region altitudes in the mid- to high-latitude ionosphere [1]. We describe a new operating mode, based on the prior work of [2] and adapted for the current generation of SuperDARN radars, which is designed to collect oblique ionospheric sounding data in the down-time at the end of each 1- or 2-min radar scan. First results are shown from four network-wide tests in 2020 and 2021 demonstrating how the maximum usable frequency (MUF) and critical frequency of the ionospheric F2-layer (foF2) can be resolved across the SuperDARN radars’ extensive fields of view [3].

References

