

International SuperDARN radar network

Natsuo Sato[1]

[1] NIPR

SuperDARN is a global scale network for coherent HF radars capable of sensing back scatter from ionospheric irregularities in the E and F regions of the ionosphere. Such HF radar network has been deployed in Arctic and Antarctic regions, and recently in middle latitude. The HF radar Doppler velocity information contained in the back scattered signals may be combined to yield maps of plasma convection and the convection electric field. The SuperDARN network is particularly suited to studies of large scale dynamic processes in the magnetosphere ionosphere system, such as the evolution of the global configuration of the convection electric field under changing IMF conditions and the development and global extent of large scale MHD waves in the magnetosphere ionosphere cavity. Recent highlights have included the transient phenomena, small scale structures and disturbances, neutral wind in the mesosphere and thermosphere. The simultaneous coordinated observations between SuperDARN radars and comprehensive instruments onboard satellites and on the ground are very important and useful to study our scientific research goal.