

R005-18

Zoom meeting C : 11/1 PM1 (13:45-15:30)  
15:15-15:30

### Reassessment of SuperDARN/SENSU near range echoes (3)

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SuperDARN is a unique international HF radar network originally designed for and primarily contributed to space weather research by providing global (high to mid-latitude) ionospheric plasma convection and electric field potential map in high temporal resolution of typically 1 to 2 minutes in quasi real time with its global coverage of international HF radar's FOVs. It also contributes to vertical coupling of ionised and neutral atmosphere in middle and upper atmosphere by observing TIDs (traveling ionospheric disturbances), neutral winds, and PMSE/PMWE related echoes in MLT (mesosphere and lower thermosphere) or MTI (mesosphere, thermosphere and ionosphere) regions.

SuperDARN near range echoes are important targets especially for lower altitude echoes like those in ionospheric D and E regions and those in MLT region. As typical range resolution of SuperDARN radars is rather coarse and HF ray paths bend in ionosphere, obtaining precise height/altitude information is key to understand the physics in the region correctly.

These years SuperDARN community has tried extensively to improve and re-establish the method of interferometer calibration mostly in success. Some radars have also started to try higher range resolution observation with imaging (SDI/FDI) and pulse coding technique etc. Some issues for these challenges still remain and have also become clearer for further improvement for near future.

We here try to re-calibrate the interferometer and elevation angles measured with our SENSU Antarctic Syowa SuperDARN radars and to reassess the altitude information of the near range echoes.

Some recent papers related to this issue proposed near range echoes in summer midday obtained with SuperDARN radars seem not from mesopause region altitude but from rather slightly higher altitude so those echoes might not be PMSEs. Results of reassessment of near range echoes in Syowa SENSU radars in more detail and possible potential origins of the echoes will be discussed.