

H.2 Observation of ULF waves in vicinity of the plasmopause using SuperDARN TIGER radar

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Tasmanian International GeoEnvironmental Radar (TIGER) has a unique location allowing coverage of plasmopause/plasmasphere regions. In addition to mapping the global ionospheric plasma convection, an important application of HF radars is monitoring ULF waves at ionospheric heights. In this work we analyze two Pc5 events observed by TIGER near the plasmopause during local magnetic evening. For one of these events data from all 16 beams of the radar permit mapping the wave amplitude and phase over a large area of the ionosphere. For this case the wave was confined to a limited ionospheric region. For the second case, which was monitored only by three beams (special mode), the wave had a global character. This was supported by ground magnetometer data from the 210 magnetic meridional array. To clarify propagation modes of the radar echoes we performed analytical ray tracing for the given ionospheric conditions, and found that for our events they may include both half-hop ionospheric scatter and single-hop sea-scatter from the boundary of the skip zone.