H.3 Polarization of a Pc5 wave observed by Saskatoon and Kapuskasing SuperDARN radars

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In principle, pairs of SuperDARN radars with overlapping fields of view present an ideal tool for directly measuring the spatial structure of ULF wave polarization at ionospheric heights. However, ULF wave events are rarely observed in the crossed beam fields of view of two radars. This may be caused by the combined effect of HF propagation and ionospheric refraction and the aspect sensitivity of scatter from the field-aligned irregularities. In this work we analyze a rare situation on 20:00-21:00 UT 18 October, 1993, when reasonably good ionospheric echoes were observed in both radars of the Canadian pair located at Saskatoon and Kapuskasing. A high-***m*** Pc5 wave was observed through the shared radar field of view. We were able to restore the 2-D distributions of the wave amplitude and polarization in the horizontal plane. This particular event exhibits a pronounced resonant contour, which was not exactly aligned with CGM latitude, and was almost linearly polarized along the magnetic meridian. At this stage we are continuing our search for more "simultaneous" events using specially developed software.