Cusp-latitude ionospheric absorption features during northward IMF

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Cusp-latitude ionospheric disturbances associated with magnetic reconnection (lobe reconnection) at the dayside magnetopause during northward IMF is less understood comparing the case during southward IMF. Daytime auroral observations at the cusp-latitude have provided useful information for studies of electrodynamics at the dayside magnetopause and the magnetosphere-ionosphere coupling. However, available observation periods are strictly restricted at daytime due to sunlit condition in the polar region. Instead of this disadvantage, an imaging riometer (IRIS) measuring radio wave absorption is a powerful tool. In this study, ionospheric absorption features obtained by the imaging riometer at Ny Ålesund (NYA), Svalbard (76ºMLAT) during the northward IMF are presented. As an example, the absorption event during 10h-12h MLT on May 3, 1994 showed enhancements at the high-latitude part in the IRIS field of view accompanied with repetitive occurrences of the northward IMF. Magnetic data at NYA also showed negative excursions during the time periods.