ION DYNAMICS IN HIGH-LATITUDE RECONNECTION EVENT: INTERBALL-TAIL OBSERVATIONS

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Interball Tail satellite was in the northern tail lobe on October 19, 1995 when CME with regular flux rope structure passed the Earth. Magnetopause crossed Interball location after IMF turned northward. Highlatitude reconnection signatures specific to northward IMF were observed within several hours. Open magnetic flux tubes were observed when spacecraft crossed magnetopause. Magnetospheric and magnetosheath plasmas were seen crossing magnetopause along magnetic field lines within there flux tubes. Magnetic field of open flux tube showed rotational discontinuity signature. Ion velocity distribution of magnetosheath plasma entering the tail has velocity cut-off (D-shape) and acceleration specific to magnetic flux tube with deHoffman-Teller velocity (in accordance with Cowley diagram). Both magnetosheath and magnetospheric transmitted components are heated by factor of two. Two regions of reconnected magnetosheath tube are indicated by ion velocity distributions. Observations of extended reconnection region are discussed.