

SuperDARN observation of equatorward progression of dayside merging flows during a geomagnetic storm

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We study the poleward flows in the dayside region and their equatorward progression observed during a large storm on December 14-15, 2006. The Dst index was as low as -147 nT when the Hokkaido radar (geographic coordinates: 43.53° N, 143.61° E), as well as the King Salmon radar (geographic coordinates: 58.68° N, 156.65° W), was in the dayside region. By using the Hokkaido and King Salmon radar data, it is possible to monitor the two-dimensional equatorward progression of the fast flows associated with the dayside merging from about 70° to 60° between 23 to 24 UT on December 14. The radars observed intense poleward flows up to 1000 m/s, and the flow region was up to 58° geomagnetic latitude. Detailed analysis of the radar data during this storm will be presented.