

昼間側極域電離圏で見られた脈動オーロラ

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Pulsating aurora seen in the dayside polar ionosphere

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We have investigated characteristics of dayside pulsating aurora based on EISCAT Svalbard radar (ESR) and multi-optical instrument data obtained between 06 and 08 UT (approximately 09 and 11 magnetic local time) on January 22, 2012. A small substorm occurred at about 23 UT on the previous day (January 21, 2012), and weak pulsating auroras were continuously observed at Longyearbyen after 02 UT. Intensity of the pulsating aurora increased at about 06:20 UT when interplanetary magnetic field (IMF) Bz component became strongly positive (from 10 to 20 nT) and solar wind dynamic pressure increased (from 5 to 10 nPa). The pulsating aurora was located equatorward of cusp precipitation region. Period of the pulsating aurora was 20-30 sec, and magnetic Pc3 pulsations were also observed at Bjornoya station. Height of electron density enhancements due to the pulsating aurora, measured with ESR, was 97-114 km. In this paper, we discuss plausible causes of the dayside pulsating aurora.