

VARIATIONS OF AURORA EMISSIONS DURING SUBSTORMS CONNECTED WITH DIFFERENT SOLAR WIND STREAMS

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Spitsbergen photometer data from the 2005/2009 winter seasons have been used to study the variation of auroral 5577 Å and 6300 Å intensity ratio in different conditions of interplanetary medium and various geomagnetic activity. Solar wind and interplanetary magnetic field parameters were taken from CDAWeb (http://cdaweb.gsfc.nasa.gov/cdaweb/istp_public/). Using WIND satellite data for the examined periods, the different solar wind streams were revealed: recurrent streams from coronal magnetic holes and magnetic clouds connected with non-stationary processes at the Sun. Substorm onset time and further development were verified by ground-based data of IMAGE magnetometers network and by data of all-sky camera at Spitsbergen. The auroral 5577 Å and 6300 Å intensity ratio course was studied for different auroral bulge locations – on the polar edge and inside the bulge. The particularities in the behaviour of the emission intensities and the 6300/5577 ratio during substorms observed during solar wind recurrent streams and during magnetic clouds are discussed.

aurora emissions, recurrent solar wind streams, magnetic clouds

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