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The influence of high-speed solar wind streams on the auroral bulge parameters and parameters of the substorm westward electrojet.

I.V. Despirak, B.V. Kozelov, A.A. Lubchich
Polar Geophysical Institute, Apatity, Russia

Solar wind parameters determine the energy input into the magnetosphere; part of this energy dissipates during magnetospheric substorms. It is known, that substorm propagation from the auroral zone up to very high latitudes is possible under high-speed solar wind (V) and southward component of the interplanetary magnetic field (Bs) conditions. However the high-speed solar wind streams depending on the periods of solar activity have different nature: recurrent streams from coronal magnetic holes and flare streams, connected with coronal mass ejections (CME). This study is devoted to investigation of the influence of different high-speed solar wind streams on the auroral bulge parameters and parameters of the substorm westward electrojet. For this, the data from the IMAGE magnetometer network have been combined by data from the Wind, Polar and Image satellites data. Solar wind parameters were determined from the Wind spacecraft observations, auroral bulge parameters- by the Ultra Violet Imager onboard Polar and.... onboard Image, the characteristics of the substorm westward electrojet - by ground-based stations of the IMAGE magnetometer network.

We investigated the influence of solar wind parameters (V and Bs) during CME and high-speed streams on characteristics of the auroral bulge- poleward propagation of auroras, longitudinal and latitudinal dimensions of the auroral bulge- and characteristics of the substorm westward electrojet- center of electrojet (that is, the locaton of the region of maximal westward current) and poleward boundary of westward electrojet. The differences of the behaviour these substorm parameters during CME and recurrent high-speed streams are discussed.