

ON THE OUTWARD DRIFT OF PLASMASPHERIC IONS DURING MAGNETIC STORMS AS A REASON FOR TEMPERATURE DECREASING.

G.A. KOTOVA 1, M.I. Verigin 1, V.V. Bezrukikh 1, V.V. Bogdanov 2

1. Space Research Institute, Russian Academy of Sciences, Moscow, Russia, e-mail: kotova@iki.rssi.ru

2. Institute of Cosmophysical Researches and Radio Wave Propagation, Far Eastern Branch of the Russian Academy of Sciences, Kamchatka region, Paratunka, Russia

Thermal plasma measurements onboard INTERBALL 2 (1996) and its sub-satellite MAGION 5 (1999-2001) revealed new feature of the magnetosphere – ionosphere system: ion cooling during the storm main phase in the night side plasmasphere. A non-linear model describing proton temperature variation during magnetic storm was developed. During magnetic storms the magnetic field decreases in the inner magnetosphere causing outward drift of plasma. This process naturally leads to plasmaspheric temperature falling. Modeled temperatures were compared to the experimental space-based values obtained in the equatorial plane and well correspondence was observed.

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Galina A. Kotova, Space Research Institute of RAS, Profsoyuznaya ul., 84/32, Moscow, 117997, Russia, tel.: +7-495-3333289, fax: +7-495-3331248, e-mail: kotova@iki.rssi.ru