



## **The influence of the geomagnetic activity on the magnetopause position.**

N. Nikolaeva (1), Yu. Yermolaev (1), N. Borodkova (1) and V. Parkhomov (2)

(1) Space Research Institute RAS, Moscow, Russia, E-mail: nnikolae@iki.rssi.ru (2)  
Baykalsky state university of economy and law, Irkutsk, Russia

The variation of deflection between observed magnetopause position and averaged one predicted by Shue et al, 1997 model in dependence on substorm activity (value of AE index) and on intensity of magnetic storms (value of corrected  $D_{st}^*$  index) are investigated. About 1300 magnetospheric boundary crossings, obtained on Interball-1 satellite during 1995-1997 years were used for analysis. The obtained results suggest that the amplitude of the magnetopause motion was small on dayside of the magnetosphere and at low latitude of the magnetotail region. It was possible that either magnetopause position was not depended on values of AE and  $D_{st}^*$  indexes or this dependence was weak. At the same time the high latitude magnetotail boundary was displaced on  $1.5R_E$  inside (the magnetotail was contracted) with increasing AE index when the magnetic storms were absent. But when the magnetic storms were observed the high latitude magnetotail boundary moved on  $3R_E$  outside (the magnetotail was distended) with increasing AE index. It was shown that the magnetotail boundary at high latitudes was moved outside both for small and high level of substorm activity. The outward motion amplitude of high latitude magnetotail was 2 times greater for moderate storms with strong substorms than for moderate storms with weak substorms. Paper is support in part by Physical Department of Russian Academy of Sciences, Program N 18, and RFBR, grant 04-02-16131.