



## **Thermal ion outflows at nightside polar cap: Interball-2 observations**

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The results of measurements of the ionospheric ions fluxes in the nightside polar cap at an altitude of about 20000 km are presented. The data have been obtained with the HYPERBOLOID instrument onboard the INTERBALL-2 satellite. Observations of ionospheric ion fluxes caused by heating in the auroral region have been excluded. In addition, an attempt has been made to exclude observations of the “cleft ion fountain” from the analysis. The measurements in the summer and winter seasons (when the ionosphere was totally sunlit and completely shadowed, respectively) are considered separately. The data of the “pure” polar wind and other outflow types founded at chosen time are presented. The flux values of the ionosphere ions are found to be strongly dependent on the intensity of the polar rain. The measurements are compared to the existing models of the polar wind. The best models (for the description of our measurements) are indicated. Dependence of ionospheric outflow from polar rain intensities is discussed. Thus new aspects of magnetosphere filling by ionospheric ions are presented. This work was partially supported by grants RFFI 03-02-16749, INTAS 03-50-4872 and HIII-1739.2003.2