



Solar cycle dynamic of the Martian induced magnetosphere. Planetary ions acceleration zones and escape.

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This work presents a massive statistical analysis of the ion flows in the Martian induced magnetosphere. We performed this analysis using Mars Express ion mass spectrometer data taken during 2008 - 2014 time interval. This data allows to make an enhanced study of the induced magnetosphere variations as a response of the solar activity level. Since Mars Express has no onboard magnetometer, we used the hybrid models of the Martian plasma environment to get a proper frame to make an adequate statistics of the magnetospheric response. In this paper we present a spatial distribution of the planetary plasma properties in the planetary wake as well as the ionospheric escape as a function of the solar activity.