

The magnetopause separates the area in which all phenomena are influenced by the Earth's magnetic field from the interplanetary space filled with the solar wind. Our ability to predict its location is a measure of our understanding of the processes that take place in this space. The present thesis is focused on the analysis of a database of roughly 30,000 magnetopause passes observed from the subsolar region to the tail of the magnetosphere with the aim of clarifying/verifying the influence of magnetospheric electric currents represented by geomagnetic indices. A linearly decreasing dependence of the magnetopause position on the AE index was found from the subsolar point down the tail. Furthermore, a correlation analysis of the influence of the Dst index was performed and we have found the delay of about 5 hours between the Dst peak and magnetopause displacement in the subsolar region, while the results are contradictory on the night side and more observations would be collected to clarify them.