



Determination of the LLBL thickness from THEMIS

O. Tkachenko, J. Safrankova and Z. Nemecek

Charles University, Faculty of Mathematics and Physics, Prague, Czech Republic
(jana.safrankova@mff.cuni.cz)

Low latitude boundary layer (LLBL) can be found at low latitudes on magnetospheric flanks but it covers the whole dayside magnetosphere. This layer thus mediates the transfer of the plasma of solar wind origin across the magnetopause. In spite of its crucial role in the solar wind - magnetosphere coupling, basic LLBL parameters and their relations to upstream conditions are still under debate. The main problem is that this region is highly structured and dynamic and single spacecraft observation cannot resolve spatial and temporal effects. We are using measurements of five Themis satellites that cross the dayside LLBL twice a day in course of the 2007 year. Simultaneous observations of the magnetic field and plasma parameters in several points of the LLBL and monitoring of the adjacent magnetosheath allow us to determine the LLBL thickness under different upstream conditions and to estimate the rate of the plasma entry into LLBL.