THEMIS MULTI-SPACECRAFT OBSERVATIONS OF MAGNETOSHEATH PLASMA PENETRATION DEEP INTO THE LOW-LATITUDE DAYSIDE MAGNETOSPHERE DURING NORTHWARD IMF

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During the THEMIS coast phase in 2007 and the dayside phase in 2008 magnetosheath plasma was often observed deep inside the magnetosphere when the IMF was northwarddirected. Using THEMIS multi-spacecraft observations we are able to determine the thickness and evolution of this layer. We present dayside boundary layer observations at different local times and for different IMF clock angles and compare with global MHD simulations to shed light on the entry process. This dayside boundary layer could be a source of the so-called cold dense plasma sheet (CDPS) frequently observed in the tail during northward IMF.

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