Characteristics of Magnetosheath-Magnetosphere Interface at the time of LLBL Formation

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The formation mechanism of the LLBL (Low Latitude Boundary Layer) is still an unresolved issue of the magnetospheric physics. Two possible mechanisms discussed so far are the K-H instability (plus some sort of diffusion processes) and magnetic reconnection. We report here the characteristics of the LLBL observed with GEOTAIL at 0>x>-30 Re during periods of northward IMF. It is suggested that, in several cases, the K-H instability is locally occurring at the low-latitude boundary, but the magnetosheath field lines involved in the K-H instability have already been reconnected at the high-latitude magnetospheric boundary.