



Plasma sheet evolution following dual lobe reconnection

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When lobe reconnection occurs simultaneously tailward of the cusp at both hemispheres (dual lobe reconnection), magnetosheath plasma can be captured in the magnetosphere and results in a cold dense plasma sheet (CDPS). Here, we study the evolution of the plasma sheet during a three days period when the IMF stays stably northward during two time intervals. For one of the two intervals dual lobe reconnection is evidenced by means of ionospheric high latitudes observations and Cluster measurements at the magnetopause. We apply the Orsini et al. (2004) method to the LANL data, in order to reconstruct the global equatorial proton distribution. Moreover, we use the single-particle code of Delcourt et al. (1992) to compute the trajectories of equatorially trapped protons in the quiet configuration of the Tsyganenko (1989) magnetic field model and in the Milillo et al. (2003) electric field model to show how particles fill the inner magnetosphere following the dual reconnection. This study has been performed in the framework of the Coordinated Investigation Programs # 10 and #19.