



Study of the occurrence of reconnection jets at the dayside magnetopause with Double Star.

L. Trenchi (1), M.F. Marcucci (1), G. Pallocchia (1), M.B. Bavassano Cattaneo (1), H. Reme (2), L. Kistler (3), B. Klecker (4), A. Korth (5), and C. M. Carr (6)

(1) IFSI-INAF, Italy, (2) CESR, France, (3) University of New Hampshire, USA, (4) MPE, Germany, (5) MPS, Germany, (6) Imperial College, UK (lorenzo.trenchi@ifsi-roma.inaf.it)

Magnetic reconnection is probably the main process by which the Earth Magnetopause can be considered an open boundary. Many satellite and ground based observations, performed until now, confirm this hypothesis. However, many questions are still open as the ones regarding how boundary conditions influence the occurrence of reconnection. We present a statistical study performed using the Double Star TC1 plasma and magnetic field data. The Tc1 satellite has an almost equatorial orbit, with an apogee of 12.4 Earth radii, that allows to observe many magnetopause crossings. We performed a visual inspection of Double Star observations in the dayside from 06 LT to 18 LT to check for the presence, at the magnetopause or in the boundary layer, of plasma flows with a different velocity, either in magnitude or direction, with respect to the adjacent magnetosheath. The Walen relation, that should hold for stationary 1D rotational discontinuities, has been used to test which of these flows could be generated by magnetic reconnection. We present the detailed study of the degree of agreement of the selected flows with the Walen relation and the analysis of the occurrence of such flows in relation to the magnetosheath parameters.