Geophysical Research Abstracts, Vol. 9, 02237, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-02237

The heliospheric current sheet local structure along the solar cycle 23

J. J. Blanco (1), J. Rodriguez-Pacheco(1) and M. A. Hidalgo(1)

(1) Space Research Group, Dpto. Física, Univ. Alcalá, Alcalá de Henares-Madrid SPAIN (juanjo.blanco@uah.es)

We have monitored the evolution of the Heliospheric Current Sheet (HCS) local structure at 1 AU through the solar cycle 23. Although the global shape of the HCS evolves following the observed changes in the coronal streamer belt, it is not clear that this change can be observed in the HCS local structure. This work is focused on the HCS local inclination and the solar wind conditions around the HCS crossings taking into account its relationship with solar wind phenomena such as magnetic clouds and stream interaction regions. We have used data from Wind mission, mainly the magnetic field instrument (MFI) and the solar wind experiment (SWE). We have defined a real HCS crossing when a magnetic field minimum, showing a polarity reversal, is observed and QeŢB (where Qe is the electron heat flux in solar wind) reverses its sign through an interval no longer than 60 minutes. Our results suggest that the HCS local structure could be more dependent on the solar wind conditions than on the solar cycle stage. This work has been supported by Spanish Ministerio de Eduación y Ciencia into the projects with reference codes: ESP2005-07290-C02-01 and the project with reference code: ESP2006-08459.