



Statistical investigation of the IMF orientation and its influence on the Earth's magnetosheath

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A statistical survey of the characteristics of the Interplanetary Magnetic Field (IMF) orientations, classified as "Parker" and "non-Parker" (or "ortho-Parker"), is performed by making use of the OMNI dataset. For the different phases of the solar cycle, we show specifically that the average magnetic field amplitude and solar wind temperature depend on the field orientation. This is a consequence of the nature of the events at the origin of ortho-Parker events and which differentiates them from Parker ones. In particular we focus our analysis on radial fields occurring in slow wind and on large amplitude Alfvén waves. We further study the response of the Earth's magnetosheath to these varying upstream conditions and illustrate this by revealing the occurrence rate of mirror mode events observed by Cluster during about 10 years.