

Panels (P)

Monitoring and Forecasting of Space Weather Conditions (POIS.1)

ORIGINS OF ICME-SHEATH HIGH INTENSITY MAGNETIC FIELDS AND THEIR GEOMAGNETIC IMPACTS

Alisson Dal Lago, alisson.dallago@inpe.br

National Institute for Space Research (INPE), Sao Jose Dos Campos, Brazil

In this work we study high intensity magnetic fields in ICME sheath regions. These high intensity fields are short duration when compared to the total duration extent of the ICMEs but they often drive intense geomagnetic disturbances. The selection of the events is via visual inspection of interplanetary data observed by L1 interplanetary monitors. We sort these events by their magnetic field profile: a very high intensity B within the sheath, followed by a smooth region, which could be interpreted as the ICME. We look at their solar counterparts and study their dynamics from the Sun to the Earth. As expected, our findings show that high speed coronal mass ejections (CMEs) are related to the occurrence of these high intensity sheath magnetic fields. However, we find important exceptions which deserve more careful study. To evaluate the geomagnetic impacts we use the Disturbance Storm-time Dst index. In the context of Space Weather, it is known that shock sheath fields are a very important origin of energy injection in the Earth's magnetosphere.