



ULF waves downstream of ICME driven shocks.

Xochitl Blanco-Cano (1), Luis Preisser (1), Primoz Kajdic (1), Lan Jian (2), Christopher Russell (3), and Janet Luhmann (4)

(1) Universidad Nacional Autonoma de Mexico, Instituto de Geofisica, Ciencias Espaciales, Mexico City, Mexico (xbc@geofisica.unam.mx), (2) NASA Goddard Space Flight Center, Greenbelt Maryland, USA, (3) IGPP, UCLA, Los Angeles, California, USA, (4) SSL, University of California, Berkeley, California, USA

IP shocks can be driven in the solar wind by fast coronal mass ejections. Past studies have shown that a variety of ULF waves can be observed upstream of these shocks. Less attention has been given to understand what wave modes permeate the sheath regions downstream of these shocks. It is expected that due to temperature anisotropy, ion cyclotron and mirror mode waves can grow downstream of IP shocks in a similar way to planetary magnetosheaths. In this work we use STEREO data to study wave structure downstream of ICME driven shocks. The waves observed downstream of IP quasi-parallel shocks have larger amplitudes than waves in the regions downstream of quasi-perpendicular shocks. It is possible that there is more free energy to generate waves downstream of these shocks. A second possibility is that some of the upstream waves are transmitted to the downstream, enhancing the wave spectra. The waves that are caught up by the IP shock may suffer mode conversion and be amplified. We also study mirror-mode storm occurrence in these sheaths.