



Multipoint observations of stream interaction regions: associated shocks, relationship with heliospheric current sheet, and other properties

L.K. Jian (1), **C.T. Russell** (1), J.G. Luhmann (2), A.B. Galvin (3)

(1) Institute of Geophysics and Planetary Physics, University of California, Los Angeles, CA, USA, (2) Space Sciences Laboratory, University of California, Berkeley, CA, USA, (3) EOS Space Sciences, University of New Hampshire, Durham, NH, USA (jlan@igpp.ucla.edu).

A stream interaction region (SIR) forms when a fast stream overtakes a preceding slow stream. From our previous study of SIRs during 1995-2004, we found about 24% of SIRs could drive shocks at 1 AU. Using observations from STEREO, ACE, Wind, and the Ulysses perihelion pass, we compare the shock presence with the properties associated with same SIRs, in order to determine the favorable conditions for the formation of such corotating shocks and also to determine the spatial variations of shock properties. We study the spatial location of heliospheric current sheet with respect to the SIR to find their effect to SIR properties. Finally, we examine the variations of duration, width, magnetic field, velocity, pressure, and other properties, over space and time.