

# **SUPRATHERMAL PROTON AND ALPHA-PARTICLE SPIKES ( $E/E = 6.5\text{--}225$ KEV/E) OBSERVED BY THE WIND-SMS EX- PERIMENT NEAR THE LIBRATION POINT L1**

**E. Kirsch** (1), U. Mall (1), B. Wilken (1) and A.B. Galvin (2)

(1) Max-Planck-Institut für Aeronomie, 37191 Katlenburg-Lindau, Germany,

(2) The Institute for Study of Earth, Oceans and Space, University of New Hampshire, Durham, NH 03824, USA.

kirsch@linmpi.mpg.de/Fax: [49] 5556 979 240

The WIND-SMS experiment consists of 3 components: S = Solar Wind Ion Composition Sensor, M = Mass-Spectrometer, S = Suprathermal Ion Composition Sensor. Particle spikes caused by small solar flares, interplanetary shocks, Corotating Interaction Regions or reconnection processes in the geomagnetic field have been studied in recent years. Here suprathermal proton and alpha-particle spikes with velocities of  $\sim 5\text{--}20$  times the solar wind velocity shall be investigated. Solar wind measurements of the SWICS-sensor ( $E/e = 0.5\text{--}31.5$  keV/e) are also available. The suprathermal spikes appear during high and small solar wind velocities as well as during Corotating Interaction Regions and last few minutes up to  $\sim 30$  minutes. The WIND/SMS experiment allows to study the nucleonic component, its velocity, the anisotropy in the ecliptic plane and in the North-South direction. Simultaneously obtained electron, magnetic field and solar wind measurements are taken from other WIND experiments. It was found that at least a part of the spikes appears near the interplanetary current sheet, associated with decreases of the magnetic field magnitude. We discuss therefore especially the question whether reconnection processes in the interplanetary magnetic field or other processes cause these spikes.