



## Galactic Cosmic Ray Propagation in the 3D Heliosphere

**B. Heber** (1), J. Gieseler (1), P. Dunzlaff (1), O. Sternal (1), R. Mueller-Mellin (1), R. Gomez-Herrero (1), A. Klassen (1) and H. Kunow (1)

Institute for Experimental and Applied Physics, Christian-Albrechts-Universität Kiel, Leibnizstr. 11, Kiel, 24098 Germany

The on-going Ulysses mission provides a unique opportunity to study the propagation and modulation of galactic cosmic rays (GCRs) in detail in the three-dimensional heliosphere. GCR particles are scattered by irregularities in the interplanetary magnetic field and undergo convection a adiabatic deceleration in the expanding solar wind. The large-scale heliospheric magnetic field leads to drifts of GCRs in the interplanetary medium. Therefore the spatial distribution and the time history of electrons and protons are a suitable tool to investigate the importance of drifts and diffusion in heliospheric modulation. In 1995 Ulysses moved from 80 S to 80 N, showing a positive latitudinal gradient for galactic cosmic ray protons and no latitudinal gradient for electrons. In 2007 the spacecraft will again span the same latitudinal range. Because the heliospheric magnetic field reversed from an  $A > 0$ - to an  $A < 0$ -magnetic epoch in 2001, the drift motion of particles is reversed. Therefore we expect no latitudinal gradient for protons and a small positive latitudinal gradient for electrons. In this contribution we will present first Ulysses COSPIN/KET measurements from the current fast latitude scan.