



Solar cycle and hemispheric trends in the structure of magnetic clouds observed by Ulysses.

A. Rees (1), A. Balogh (1,2), R. Forsyth (1)

(1) Imperial College London, (2) ISSI, Bern ; (adam.rees@imperial.ac.uk)

It has been suggested there is a hemispheric and solar cycle trend to the orientation/structure of interplanetary magnetic clouds (MCs). In the past this has been difficult to prove as MCs observed close to the ecliptic could originate in either solar hemisphere. With over 16 years worth of continuous solar wind observations, the high latitude Ulysses dataset is ideal for investigating this phenomena.

We have surveyed all of the MCs observed by Ulysses to date and fitted to each event a simple constant alpha, force-free flux rope model. This has allowed us to determine each MCs gross properties (orientation, chirality, radius, closest approach parameter, symmetry factor and axial field strength) . We present here trends observed in these properties, particularly those associated with hemisphere and solar cycle.