

# **ULF Pulsations in the Kronian Magnetosphere and their Relation to Plasma Sheet Dynamics**

**G. Kleindienst** (1), K.-H. Glassmeier (1), M. K. Dougherty (2), C. S. Arridge (2), N. Krupp (3)

(1) TU Braunschweig, Institut fuer Geophysik und extraterrestrische Physik, Mendelssohnstrasse 3, 38106 Braunschweig, Germany (g.kleindienst@tu-bs.de), (2) Imperial College London, Prince Consort Road, London, SW7 2 BW, United Kingdom, (3) Max-Planck-Institut fuer Sonnensystemforschung, Max-Planck-Strasse 2, 37191 Katlenburg-Lindau, Germany

Observations made on-board the Cassini spacecraft in the magnetosphere of Saturn show the existence of ultra low frequency waves in the tail region of the magnetosphere. This wave activity is well correlated to the prominent modulation of the background magnetic field with the planetary rotation period. Spectral analysis indicates the presence of waves in a broad frequency range between 0.5 - 8.0 mHz corresponding to periods of 2 - 30 minutes. These periods suggest that the waves are probably not eigenoscillations of the entire magnetospheric system, but excitations confined to the night-side plasma sheet. Wave polarisation is predominantly transverse with observed minor compressional perturbations. The characteristics of these plasma waves and their spatial distribution will be presented and models which support the reflection and confinement of the ULF-waves in the plasma sheet are discussed to uncover the nature of their origin, their properties and their relation to the plasma sheet geometry, motion and dynamics.