



Cold Plasma Observations in the Deep Ionosphere of Titan

K. Ågren (1), M. Westerberg (1), J.-E. Wahlund (1), M. Galand (2), I. Müller-Wodarg (2), D. Lummerzheim (3), W. S. Kurth (4), A. Coates (5)

(1) Swedish Institute of Space Physics, Uppsala, Sweden, (2) Imperial College London, London, UK, (3) University of Alaska, Fairbanks, USA, (4) University of Iowa, Iowa City, USA, (5) University College London, Dorking, UK (karin.agren@irfu.se / Phone: +46 18-4715911)

Cassini flybys of Titan reveal a highly variable and complex structure of the ionised environment near the moon. The main ionisation sources of Titan's ionosphere (photo-ionisation and electron impact ionisation) depend on the orbital position of the moon and magnetospheric upstream plasma flow conditions. We focus this study on the comparison and analysis of observations by the Radio and Plasma Wave Science (RPWS), in particular the Langmuir Probe (LP), during a number of recent polar flybys of Cassini. We make use of a simplified electron impact ionisation model to reproduce the altitude structure of the deep ionosphere of Titan. We also investigate the influence of a geometric factor imposed by the magnetospheric flow direction on the observed density profiles.