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Field Line Resonances measured by THEMIS

T. E. Sarris (1,2), W. Liu (2), K. Kabin (3), X. Li (2), S. R. Elkington (2), R. Ergun (2), R. Rankin (3), V. Angelopoulos (4), J. Bonnell (5), and K. H. Glassmeier (6)

(1) Democritus University of Thrace, Electrical Engineering and Computer Sciences, Xanthi, Greece (tsarris@ee.duth.gr), (2) Laboratory for Atmospheric and Space Physics, Univ. of Colorado, Boulder, Colorado, (3) Department of Physics, University of Alberta, Edmonton, Alberta, Canada, (4) IGPP, University of California, Los Angeles, (5) Space Sciences Lab, University of California-Berkeley, California, (6) IGEP, Technical University of Braunschweig, Germany

We use THEMIS electric and magnetic field measurements in the inner magnetosphere to measure and characterize Pc4 & Pc5 ULF pulsations, which are identified as field line resonances. Their frequency and polarization across different L-shells (plasmapause to magnetopause) is compared against model results, and they are found to mostly agree with the fundamental toroidal mode of oscillation, even though rotations to poloidal oscillations are also observed. The instrumentation and the alignment at close distances (< 1 RE) among some of the THEMIS probes (particularly in the first period of its mission) provide unique opportunities to measure phase differences between the THEMIS probes and allow estimates of the azimuthal mode number and propagation characteristics of ULF waves.