RSPP seminars

Dr David Andrews

Swedish Institute of Space Physics, Uppsala

“The Structure of Planetary Period Oscillations in Saturn’s Equatorial Magnetosphere: Results from the Cassini Mission”

Saturn's magnetic field, produced in its interior by dynamo processes, is apparently perfectly symmetric with respect to the spin-axis of the planet. Despite this, measurements of magnetic fields in Saturn's magnetosphere, radio emissions and plasma populations all show oscillations with periods close to the (inferred) rotation rate of the interior of the planet. The origin of these oscillations is yet to be fully explained, but electrodynamic coupling between the upper atmosphere/ionosphere, and magnetosphere plays a central role. In this study, we use magnetic field measurements from NASA's Cassini spacecraft to statistically study the spatial structure of the magnetic field oscillations, and the electrical currents producing them. Expanding on previous studies, we find good overall agreement with existing theoretical models, but with discrepancies suggestive of the influence of solar-wind magnetosphere coupling on the system.

Wednesday, March 27th at 2 pm in

Physics LTC