



RSPR seminars

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**“Modelling flux ropes in Titan’s ionosphere:
Saturn’s magnetospheric influence on Titan’s induced magnetosphere”**

“Flux ropes are ubiquitous in magnetised plasmas all over the solar system and consist of twisted ‘ropes’ of magnetic field lines. Titan has a very turbulent and dynamic interaction with Saturn’s magnetosphere, the moon orbits at 20 Saturn radii and Saturn’s magnetopause stand-off distance is around 22-27 Saturn radii. Hence, during strong compression regions Titan will enter the magnetosheath and occasionally even the solar wind. We compare and evaluate a number of common flux rope models used at other planetary bodies and in the solar wind. These models can be fitted to Cassini’s magnetometer data to retrieve the size, shape and strength of the 85 flux ropes found during Cassini’s Titan flybys and compare them with flux ropes throughout the solar system. We comment on the relationship between Titan’s environment and the detection of flux ropes, which leads to a discussion of the initiation, development and maturity of flux ropes in the Titan system and how these phases fit into the assumptions of the different models”.



Wednesday, April 18th at 2 pm in Physics LTD