



Solar wind and internally-driven motions of Saturn's magnetotail

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Saturn's magnetosphere is replete with magnetospheric periodicities. Magnetic fields, plasma parameters, energetic particle fluxes, and radio emissions have all been observed to vary at a period close to that of Saturn's assumed sidereal rotation rate. In particular, periodicities in plasma, energetic particles and magnetic fields in Saturn's magnetotail can be interpreted in terms of periodic vertical motion of Saturn's outer magnetospheric plasma sheet [e.g., Khurana et al., 2009; Jackman et al., 2009; Arridge et al., submitted]. In this talk the forces driving the motion of Saturn's magnetotail will be examined to better understand the origin of both internally- (i.e. periodic) and externally-generated (i.e. solar wind) magnetotail motions.