



Energy and Distribution of Field Aligned Ions and Electrons Near Enceladus..

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Abstract

The observation of very hot ions and electrons near Enceladus led to the discovery of the Enceladus auroral footprint, confirming the existence of electrodynamic coupling between Saturn and its moon. A stagnation region of freshly made ions near Enceladus 'hold up' the magnetic field as it tries to rotate past the moon at a relative speed of ~26 km/s causing electric current to flow. In addition to field aligned ions very close to Enceladus we have also observed them at other local times away from Enceladus – implying the existence of an extended neutral torus. In this presentation we discuss the energy and distribution of the ions and electrons near Enceladus and at different locations along its orbit and their possible role as an additional ionisation source near the moon.

