



Preliminary Results on Saturn's Inner Plasmasphere as Observed by Cassini: Comparison with Voyager

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We will present preliminary results of our analysis of Saturn's inner plasmasphere as observed by the Cassini Plasma Spectrometer (CAPS) experiment during Cassini's initial entry into Saturn's magnetosphere and when the spacecraft was put into orbit around Saturn. For this initial analysis ion fluxes are divided into two sub-groups: protons and water group ions. We present a preliminary analysis of the ion composition and details of the various fluid parameters such as density, flow velocity and temperature for both protons and water group ions. We will also make comparisons with the electron plasma measurements. Within the plasmasphere inside of Enceladus' orbit water group ions are about a factor of 10 greater than the protons in number and densities can exceed 50 #/cm^3 . These results will eventually allow us to solve the force balance equation along the magnetic field (ions and electrons) and predict the vertical distribution of the plasma along the magnetic field. Once this is done we will be in a position to make detailed comparisons with the Voyager results.