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Thermal electrons in Saturn's magnetotail

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In this paper we examine the structure and properties of plasma electrons between 0.5eV and 28keV in Saturn's magnetotail, as observed by the Cassini Electron Spectrometer (ELS). We describe the spectral shape of the electron distributions and carry out moment integrations. We study the statistical distribution of electron number and energy densities, temperature, electron beta, and total (electron thermal + magnetic) pressure in the tail plasma sheet and also examine the variation of these quantities through the plasma sheet from the centre to the lobes. We also explore the systematic modulation of these electron parameters with various longitude systems and explore their relationship to current sheet crossings observed in the magnetometer data.