



Warm and hot electron distribution in the inner magnetosphere and the plasmashet region related to the magnetospheric indices and the solar wind parameters: a statistical study form the NOAA POES TED and MEPED data

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Using DMSP satellites, low altitude measurements has demonstrated to give a good picture of the plasmashet population. The NOAA POES satellites are a constellation of five spacecraft orbiting in a polar orbit between 800 and 850 km and covering a wide L-shell range. They provide fourteen years of data without interruption which allow to make statistical study of the inner magnetosphere and the plasmashet population. Moreover, since 2002, three of the NOAA POES satellites are located at different local times allowing to deduce the plasmashet properties, even for huge magnetic activity. This paper present a statistical study of the warm and hot electron density over an energy range [0.16 ; 300] keV and between 1 and 12 Re. We present here maps in Mac Ilwain L paramater / MLT and we use the magnetic indices and solar wind parameter to classify our observations. The results show a clear motion of the plasmopause when Kp increase, which is in agreement with previous results, but it also show changes of the plasmopause shape and strong density variations in the night side sector. Moreover, a clear link between the solar wind parameters, in particular Bz, and the density distribution has been established. Unexpected distributions have been observed in the dayside and will be discussed here.