



Coupling of plasma populations in the dusk sector of the inner magnetosphere

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We investigate the coupling of different plasma populations in the dusk sector during the intervals of plasmaspheric plumes, using the four-point Cluster observations. The Cluster satellites monitor cold (up to a few 10 eV), mid-energy (up to 30 keV) and high-energy (up to 400 keV) particles that reveal the edges of the plasmasphere, the plasma sheet and radiation belt/ring current. The spacecraft also measure electromagnetic fields and waves that can be used to determine e.g. the flow separatrix between the co-rotation and convection regimes and the increase of wave activity within the plume. The spacecraft cross the plasmaspheric plume at the dusk sector nearly in all conditions but during active intervals, the plume characteristics change drastically, e.g., plasma density and flow speed increase, the boundaries become steeper and the plume moves closer to the Earth. In this presentation we pay a particular attention on the effects of changing plume characteristics on the radiation belt/ring current and plasma sheet particles.