



Field-Aligned Current Signature under Different Data Time Resolution

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Field-aligned currents are the significant part in magnetosphere-ionosphere coupling. They frequently appear in the plasma sheet boundary layer and transport energy and momentum from the magneto-tail to the near-Earth region and the ionosphere. Field-aligned currents have been extensively examined from the past to now, such as Triad, ISEE, Geotail, Cluster and MMS. But only until Cluster and MMS can we explicitly examine field-aligned current density, with little assumption about the field-aligned current structure, such as that the field-aligned current is sheet like and extends along the dawn-dusk direction, which is assumed by ISEE and Geotail observation. The increasing MMS time resolution of new instruments has refreshed our knowledge about the fine structure of the field-aligned currents. Here we present some examples of the field-aligned currents observed by MMS, and compare the field-aligned current obtained under different data time resolution to illustrate the great advantages of MMS high resolution data in current fine structure study.