



## **Study on DFCS using MMS observations**

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Understanding the complex current system around DFs is necessary to study the association of dipolarization front current sheet (DFCS) system and SCW formation. In this study, we investigate dipolarization fronts (DFs) structures with sharp enhancements of the north magnetic  $B_z$ , using two tail season data from Magnetospheric Multiscale (MMS). With MMS satellites at radial distance within  $12 R_e$ , it is possible for us to study DFCS and DFs's characteristic such as velocity and thickness at the inner magnetotail regions. For the MMS data in 2015, it is feasible to get currents from Ampere's law because of the shape of the tetrahedron. The curlometer technique is used on the 2016 data. With unprecedented accuracy and resolution of MMS observations, we are able to distinguish the fine structures of DFCS in the magnetotail, which will shed more light on the propagation and evolution of DF structures and thus on the effects of DF to the inner magnetosphere.