

## Characteristics of energy conversion and electron acceleration around the fast plasma flows in near-Earth magnetotail

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Fast earthward flows accompanied by large  $B_z$  enhancement, are sometimes observed in the near-Earth magnetotail. Such  $B_z$  enhancements are called "dipolarization front". In some cases, earthward flows are instantly followed by the tailward flows. We call such events as "flow reversal", where the earthward flow seems to reverse to the tailward flow. However, the energy conversion and electron acceleration mechanisms during the flow are not fully understood. In this study, the two types of events were analyzed using THEMIS spacecraft data from Dec., 2008 through Mar., 2009. The number of events is 25 for dipolarization front events [1] and 16 for flow reversal events. Based on the results of  $\mathbf{j} \cdot \mathbf{E}$  and electron distribution function, we discuss energy conversion and electron acceleration mechanisms during the dipolarization front events or flow reversal events.

[1] A.Runov, V.Angelopoulos, X.-Z.Zhou, X.J.Zhang, S.Li, F.Plaschke and J.Bonnell, A THEMIS multiscale study of dipolarization fronts in the magnetotail plasma sheet, J. Geophys. Res., 116, A05216, 2011.

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