

## Numerical Simulations and Satellite Observations of Fast Plasma Flow in the Near-Earth Magnetotail

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Earthward fast plasma flow in the near-Earth plasma sheet is studied using three dimensional magneto-hydro-dynamics (MHD) simulations on the basis of spontaneous fast reconnection model. The cross tail component of the fast flow ( $V_y$ ) is particularly studied in this study. Large enhancements of them in the BBF events are frequently observed by in-situ satellites. The time variations of  $V_y$  component observed by satellites are quite different at the each observation position. It is suggested in this study from the simulations and satellite observations that those variations depend on the sheared component of magnetic field ( $B_y$ ). The  $B_y$  component twist the shape of plasmoid and the channel of fast flow. As a results of this twist, slow shock lean to the direction of  $B_y$ . The plasma accelerated by the slow shock flows toward the negative direction of  $B_y$ .

Keywords: magnetic reconnection, MHD simulation, fast plasma flow, Near-Earth magnetotail, satellite observation