

# **THEMIS EVENT STUDY OF THE GEOMETRY AND PLASMA PROPERTIES OF THE FLAPPING WAVE**

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Properties and origin of tail current sheet deformations associated with flapping motions are studied using a special configuration of five THEMIS spacecraft during the disturbed time period of March 5, 2008. Spacecraft P1, P2, P4 were aligned radially near midnight along the flapping wave front between 11 and 16Re and synchronously observed the Bx-variations, whereas spacecraft P3, P4, P5 were separated in cross-trail direction by  $<3R_E$  evidencing a very short Y-scale of perturbations. The MVA results confirmed the dawnward propagation and the geometry of the flapping waves to be of YZ-kink type. During the most strong perturbation P1, P2 and P4 synchronously observed the anticlockwise rotational motion of the plasma tube, which was preceded by the pulse of field-aligned plasma flow. The observations are compared with prediction of double gradient theory of Erkaev et al to identify the mode and origin of the observed perturbation.

magnetosphere, tail current sheet, flapping motions

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