



Dispersive flapping waves of magnetotail current sheet: event study

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A kink-like flapping event of Earth magnetotail current sheet, which consists of two frequency bands successively, is studied by the multipoint observations of Cluster. The multipoint analysis of Cluster observations demonstrates that the higher frequency band (period is about 10 mins) has faster propagation velocity (about 29 km/s), shorter wavelength (about 3 RE), and smaller amplitude (1~1.5 RE). In contrast, the lower frequency band (period is about 22 mins) shows slower propagation velocity (about 21 km/s), longer wavelength (about 4.4 RE), and larger amplitude (2~3 RE). Comparison with the flapping models demonstrates that the dispersion of theoretical models doesn't show consistency with the results of this event, which suggests that new or more advanced kink-like flapping theories or models in the future have to consider the constraints of the dispersive properties demonstrated by this event.