

Abstract Submitted  
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**The influence of out-of-plane shear flow on Hall magnetic reconnection and FTE generation** CHIJE XIAO, YANGAO CHEN, XIAOGANG WANG, School of Physics, Peking University, China, ZHIWEI MA, Zhejiang University, China, HUI ZHANG, Institute of Geology and Geophysics Chinese Academy of Sciences, China — Based on the three-dimensional Hall magnetohydrodynamic (MHD) simulations and in situ measurements of THEMIS spacecraft, magnetic reconnection driven by an out-of-plane shear flow in the symmetric Harris current sheet, asymmetric case with a guide field, specially the parameters in one case based on a vivo flux transfer event (FTE) observed by THEMIS spacecraft, are all calculated. The simulation results show that during the Hall reconnection processes, the out-of-plane shear flow could make the initial single X-line bifurcated, and then a magnetic island (without guide field) or flux rope (with guide field) generated and grown up quickly. In  $\sim 240$  Alfvén time (204 seconds) the flux rope could be reach to one Earth radius ( $R_E$ ), the typical scale of FTE observed in the day-side magnetopause. These results give some clues on the generation mechanism of FTE. References: Chen Y. G., Xiao C. J., Wang X. G., et al., *J. Geophys. Res.*, doi:10.1029/2013ja50417, (2013)

Chijie Xiao  
School of Physics, Peking University, China

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