



## **Motion of reconnection region in the Earth's magnetotail. Multiple reconnection.**

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During magnetic reconnection in the Earth's magnetotail, the reconnection site (X-line) can move in a specific direction. We present a detailed statistical study of the X-line motion. Using four-spacecraft Cluster observations, we identify the X-line velocity distinguishing between the single and multiple reconnection events. Most of the X-lines move tailward (radial outward) along the current sheet, however the Earthward motion was estimated for a couple of multiple X-lines. The X-lines also propagate outward from the midnight sector in the dawn-dusk direction in the current sheet plane. We found that the X-line radial motion is consistent with the direction of the radial pressure gradient. Besides, we found that the X-line speed in the Earth-tail direction is comparable and proportional to the reconnection inflow speed and approximately 0.1 of the reconnection outflow speed. These results suggest that both the global pressure distribution and the local reconnection physics may affect the X-line motion. We also discuss the interaction among multiple X-lines based on detailed analysis of an event showing counter-streaming jets from two different X-lines.