Geophysical Research Abstracts
Vol. 15, EGU2013-10104, 2013
EGU General Assembly 2013

Reconnection X-line orientation and motion in the Earth magnetotail

Alexandra Alexandrova (1), Nakamura Rumi (1), Wang Rongsheng (2), Nakamura Takuma (3), Teh Wai-Leong (1), Semenov Vladimir (4), and Baumjohann Wolfgang (1)

(1) Space Research Institute, Austrian Academy of Sciences, Graz, Austria, Austria (alexandra.alexandrova@oeaw.ac.at), (2) Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, China, (3) Los Alamos National Laboratory, Los Alamos, New Mexico, USA., (4) St. Petersburg State University, St. Petersburg, Russia

The reconnection X-line is determined from observations of the simultaneous reversal of the flow and the magnetic field component normal to the current sheet. During such measurements the spacecraft motion is usually negligibly small. Thus, we can interpret that the observed reversal is caused by the X-line motion. For a number of events detected by the four Cluster spacecraft we attempt to obtain the orientation of the current sheet, the direction of the X-line motion and the speed of this motion. Using a simple current sheet model including X-line geometry we estimate the possible size of the reconnection region with an accuracy of ion measurements.