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# Fire hose instability observed between the reconnection sites in the Earth's magnetotail

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Magnetic reconnection taking place in multiple sites represent a complex and not fully understood stage of the current sheet disruption dynamics. We present observations of multiple reconnection in the Earth's magnetotail. Between two active reconnection sites, on the periphery of the current sheet, Cluster spacecraft observed parallel and antiparallel ion beams, which result in the parallel ion anisotropy. The anisotropy is accompanied by ion-scale electromagnetic fluctuations. The analysis of plasma stability performed by solving the linear wave dispersion indicates positive growth rate of the fluctuations corresponding to the fire hose instability and with the frequency similar to the observed fluctuations. We show an agreement of the observations with the particle-in-cell simulations. The results suggest that whereas magnetic energy is converted to the energy of plasma in the reconnection sites, the fire hose instability developed between the reconnection sites converts an excess of plasma energy of the proton anisotropy back to the energy of magnetic field fluctuations.