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# Microphysics of Magnetic Reconnection Sites

**A. Vaivads** and the Team
Swedish Institute of Space Physics, Uppsala, Sweden

Cluster spacecraft during four year period have many times crossed magnetic reconnection sites both at the magnetopause and in the magnetotail. We present detailed observations of the magnetic reconnection sites at the magnetopause. We analyze the structure and microphysics of the separatrix regions. Based on Generalized Ohms Law we identify regions of ion and electron decoupling. In addition, we investigate different higher frequency plasma wave emissions, from drift lower hybrid to plasma waves. Particularly we discuss their role in the wave-particle interaction and the possiblity to use these wave emissions as a diagnostic tool ot the reconnection sites. We compare our results with the recent numerical simulations of magnetic reconnection.