Geophysical Research Abstracts, Vol. 7, 08321, 2005 SRef-ID: 1607-7962/gra/EGU05-A-08321 © European Geosciences Union 2005



## Lower-hybrid drift waves associated with thin current sheets at the magnetopaus

**Y. Khotyaintsev** (1), A. Vaivads (1), M. André (1), I. Silin (2) and S.C. Buchert(1) (1) Swedish Institute of Space Physics, Uppsala, Sweden, (2) Department of Physics, University of Alberta, Edmonton, Canada (Contact: yuri@irfu.se/+46-18-4715905)

We present observations of electromagnetic fluctuations in the lower-hybrid frequency range at the magnetopause by Cluster. We study cases of thin ( $\sim c/\omega_{pi}$ ) magnetopause current sheets with four cluster spacecraft being at small separation (100 km). The strongest wave activity is localized at the low density (magnetospheric) side of the magnetopause and has amplitudes up to 50 mV/m. We use EFW internal burst data to identify these fluctuations as lower-hybrid drift waves (LHDW). The LHDW have nonzero average  $\langle dE * dn \rangle$  and cause anomalous resistivity in the vicinity of the current sheet. We compare Cluster observations with Vlasov simulations.