

Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

Cluster observation of electron energization during the magnetospheric reconnection. HARSHA GURRAM, JAN EGEDAL, Univ of Wisconsin, Madison — In situ spacecraft measurements in the Earth's magnetosphere have shown that magnetic reconnection energizes the electrons and is a source of the suprathermal electrons. This study investigates the electron distribution functions and electron heating recorded by the Cluster Mission during the reconnection event on August 21, 2002 in the interval 0754 to 0825. This event exhibits a flow reversal with the characteristic isotropic flat-top distribution around the flow reversal namely near the X-line. The distribution function measurements near reconnection reveal the presence of cold beams directed towards the X-line while the energized electrons are seen to be moving away from the reconnection region. The electrons see an increase in their bulk energy by a factor of 100 from the inflow to exhaust. The observed beam-like features are in good agreement with the kinetic simulations and confirm the model for electron energization in reconnection exhaust[1]. [1]J.Egedal W.Daughton, A.Le and A.L.Borg (2015), *Phys. Plasmas*

Harsha Gurram
Univ of Wisconsin, Madison

Date submitted: 15 Jul 2016

Electronic form version 1.4