

Abstract Submitted
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MMS observations of plasma wave and electron energization in the electron diffusion region of asymmetric reconnection with strong guide field¹ CHIJIE XIAO, SIQI ZHAO, MIJIE SHI, School of Physics, Peking University, ZUYIN PU, Peking University, XIAOGANG WANG, Harbin Institute of Technology — Here we report an asymmetric reconnection event with strong guide field observed by Magnetospheric Multiscale Mission (MMS) on the dayside magnetopause. In this event there are multiple wave modes, such as electron Alfvénic mode, broadband waves between the lower-hybrid and electron cyclotron frequencies, exist in the vicinity of the electron diffusion region and the separatrix. And the electron velocity distribution functions show that bi-stream electrons with low energy ($<230\text{eV}$) keep along the magnetic field, while fluxes of electrons with energy higher than 230eV increases dramatically around the X-line. The wave-particle interactions and electron energization processes are investigated and comparison with some 3D numerical simulation results.

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