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**Circularly polarized Magnetic Field of Whistler Wave during Fast Magnetic Reconnection** XIANG ZHAI, PAKORN WONGWAITAYAKORNKUL, PAUL BELLAN, Caltech, BELLAN GROUP TEAM — Obliquely propagating whistler waves are expected to have circularly polarized magnetic components [1] and to be associated with fast magnetic reconnection. In the Caltech plasma jet experiment, a current-carrying collimated jet is created from the merging of eight plasma-filled flux ropes. Fast magnetic reconnection occurs during the merging process. When the current-carrying jet undergoes fast kink instability, a lateral Rayleigh-Taylor instability occurs on the jet surface and induces another fast magnetic reconnection event [2]. A capacitive coupling probe placed near the jet has measured fast electric field fluctuations at 15MHz which is in the whistler regime for this plasma. A 3D fast Bdot probe with good electrostatic rejection has been specifically designed to measure the 3D magnetic components of the whistler wave. Preliminary results have revealed a 3D 15 MHz magnetic fluctuation. Work is underway to increase the sensitivity of the induction probe and also to reduce electrostatic pickup. With the improved probe, the polarization property of the magnetic component of the whistler wave is expected to be resolved if it exists.

[1] P. M. Bellan, 2013, Phys. Plasmas 20, 082113

[2] A. L. Moser, & P. M. Bellan, 2012, Nature, 482, 379.

Xiang Zhai  
Caltech

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