

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Magnetic reconnection studies with wire ablation plasmas¹ JOHN GREENLY, CHARLES SEYLER, XUAN ZHAO, Cornell University — We have found that arrays of fine wires driven by pulsed current (1 MA, 300 ns pulse length) can be used to study magnetic reconnection. A pair of parallel wires produce an X-point magnetic topology between them. The wires continuously evolve plasma from their expanding surfaces and when the driving voltage reverses, the current in the surface plasma reverses and it is repelled from the wire cores, producing a reconnection flow. These aluminum plasmas at a temperature of 30 - 100 eV and 10^{18} /cm³ density radiate strongly in soft X-rays, and XUV imaging shows the development of the X-point magnetic null into an extended current sheet. These experimental results will be presented.

¹Work supported by US DOE and NSF.

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Date submitted: 25 Jul 2011

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