

Abstract Submitted  
for the DPP19 Meeting of  
The American Physical Society

**Measurement of Electrical Potential Profile in Collisional Plasma Shock**<sup>1</sup> SAMUEL LANGENDORF, TOM BYVANK, Los Alamos National Laboratory — Collisional plasma shocks are expected to contain self-generated electric fields that modify the diffusion of plasma species across the shock front [1]. We perform experiments on the Plasma Liner Experiment (PLX) to create collisional plasma shocks between coaxial-gun-produced plasma jets, and study the electrical potential profile across the shock using a multi-tip Langmuir probe. The probe tip dimensions are minimized below the plasma ion-ion mean free path to prevent standing shock fronts from forming on the probe tips and supports. Results will be compared to theory and simulation and inform ongoing efforts to incorporate detailed models of shock formation into plasma simulation codes.

<sup>1</sup> Jaffrin, M. Y., Probstein, R. F. *The Physics of Fluids* 7.10 (1964): 1658-1674.

<sup>1</sup>Supported by DOE OFES

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Date submitted: 02 Jul 2019

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