

# Plasma Physics Seminar

Physics and Astronomy Building (PAB) 4-330

Thursday, March 7, 2019

1:30PM

## Fusion concept exploration and basic plasma shock research on the Plasma Liner Experiment at Los Alamos

**Scott Hsu**

Director, ARPA-E Fusion Research Program  
U.S. Department of Energy

The Plasma Liner Experiment (PLX) was built in 2010-2011 at Los Alamos National Laboratory to conduct experiments on hypersonic merging plasma jets formed by pulsed-power-driven railguns and coaxial plasma guns. Over the years, experiments on PLX have pursued both driver development for plasma-jet-driven magneto-inertial fusion (PJMIF, a fusion concept) and fundamental experimental studies of plasma shocks. This seminar will provide a review of results from PLX, touching on results from the references below and emphasizing the most recent three-year period. This work has been supported by US-DOE (FES, ARPA-E, and LDRD).

T. J. Awe et al, PoP 18, 072705 (2011).

S. C. Hsu et al., IEEE Trans. Plasma Sci. 40, 1287 (2012).

S. C. Hsu et al., PoP 19, 123514 (2012).

E. C. Merritt et al., PRL 111, 085003 (2013); PoP 21, 055703 (2014).

A. L. Moser et al., PoP 22, 055707 (2015).

C. S. Adams et al, PRE 92, 051101(R) (2015).

S. J. Langendorf and S. C. Hsu, PoP 24, 032704 (2017).

S. C. Hsu et al., IEEE Trans. Plasma Sci. 46, 1951 (2018).

S. J. Langendorf et al., PRL 121, 185001 (2018)