

Abstract Submitted  
for the DPP20 Meeting of  
The American Physical Society

**Theory, Simulations, and Experiments on Magnetically Insulated Line Oscillator (MILO) at the University of Michigan<sup>1</sup>** DREW PACKARD, YY LAU, CHRIS SWENSON, NICHOLAS JORDAN, BRENDAN SPORER, ROMAN SHAPOVALOV, RYAN MCBRIDE, RONALD GILGENBACH, Univ of Michigan - Ann Arbor, PLASMA, PULSED POWER, AND MICROWAVE LABORATORY TEAM — A fundamental theoretical study of Brillouin flow has been applied to the design of a magnetically insulated line oscillator (MILO) for operation on the Michigan Electron Long Beam Accelerator (MELBA). MELBA applies -300 to -500 kV and up to 10's of kA for 0.3-1.0  $\mu$ s. Simulations in CST-Particle Studio have been used to corroborate the theoretical predictions, and preliminary experiments on MELBA will be discussed. CST-PS has also been applied to gain understanding of a GW-class MILO for which experiments are planned to take place at UM [1]. [1] Packard et al, "HFSS and CST Simulations of a GW-Class MILO", IEEE T-PS, vol. 48, 1894, (2020).

<sup>1</sup>This work was supported by the U.S. Office of Naval Research through the Counter Directed Energy Weapons Program under Grants N000014-19-1-2262 and N00014-18-1-2499.

Drew Packard  
Univ of Michigan - Ann Arbor

Date submitted: 29 Jun 2020

Electronic form version 1.4