

Abstract Submitted
for the DPP20 Meeting of
The American Physical Society

Simulating Dynamic Triggering for Spark Gap Switches¹ PIERRE GOURDAIN, IMANI WEST ABDALLAH, MARISSA ADAMS, MATTHEW EVANS, HANNAH HASSON, JAMES YOUNG, DANIEL MAGER, University of Rochester — In LTD technology, high-pressure spark gap switches are vital to creating triggering events on the nanosecond timescale. While this architecture requires many switches to function synchronously in parallel, present designs have shown limitations, mostly due to their lack of specification toward LTD's. These limitations include high inductance and excessive etching on the electrodes of the switch. To reduce the overall inductance in and minimize maintenance on HADES (High Amperage Driver for Extreme States), we have designed a spark gap, ball switch that addresses these disadvantages. COMSOL studies (2-D and 3-D) of dynamic triggering events (DC and Pulsed) at +/- 100 kV are used to investigate potential current paths inside of the switch cavity. Our COMSOL studies will inform changes to our design before testing our switches in a multi-brick system.

¹This work was completed with support from the National Science Foundation (NSF PHY-1943939, NSF PHY-1725178).

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Date submitted: 11 Nov 2020

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