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2D Axisymmetric vs 1D: A PIC/DSMC Model of Breakdown in Triggered Vacuum Spark Gaps STAN MOORE, CHRIS MOORE, JEREMIAH BOERNER, Sandia National Laboratories — Last year at GEC14, we presented results of one-dimensional PIC/DSMC [1-2] simulations of breakdown in triggered vacuum spark gaps. In this talk, we extend the model to two-dimensional axisymmetric and compare the results to the previous 1D case. Specially, we vary the fraction of the cathode that emits electrons and neutrals (holding the total injection rates over the cathode surface constant) and show the effects of the higher dimensionality on the time to breakdown.

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[1] C. K. Birdsall and A. B. Langdon, *Plasma Physics via Computer Simulation*, McGraw-Hill, New York (2005).
[2] G. A. Bird, *Molecular Gas Dynamics and the Direct Simulation of Gas Flows*, Oxford University Press, Oxford, UK (1994).

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