

Abstract Submitted
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Novel wire ablation configurations for basic physics studies¹ JOHN GREENLY, CHARLES SEYLER, Cornell University — We present the status of investigations of novel wire ablation configurations on the COBRA 1 MA pulser. Arrays of wires heavy enough to serve as continuous sources of ablation streams for times of 100-200ns are being employed to create configurations suited to study of a variety of physical effects, including shock structures, instabilities and the conversion of magnetic energy to kinetic energy by magnetic reconnection. A promising configuration being developed is a linear array of wires, or a section of foil, with return current and other current-carrying structures located so as to form a nearly uniform sheet of flowing plasma away from the wire plane, which can be directed at obstacles for shock and wake studies, or at another similar plasma sheet for reconnection studies. Simulations with the PERSEUS two-fluid code are being used intensively both to guide design and to interpret the results of the experiments.

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