Abstract Submitted
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Pulsed power driven radiative shockwaves[1] JONATHAN SKIDMORE, ISP, Imperial College London, SIMON BLAND, SERGEY LEBEDEV, FRANCISCO SUZUKI-VIDAL, GARETH HALL, MATTEO BOCCHI, GEORGE SWADLING, JEREMY CHITTENDEN, ADAM HARVEY-THOMPSON, LOUISA PICKWORTH, GUY BURDIAK, ESSA KHOORY, PHILIP DE GROUCHY, LEE SUTTLE, Imperial College London — A method of tailoring pulsed power driven radiative shock waves is discussed and preliminary data presented. A radial plastic disk coated in a thin film of Aluminium was held between two co-axial electrodes inside a gas cell filled with a high Z gas. The current path produced a toroidal magnetic field around the central cathode. As the current flowed from the cathode and onto the foil surface it became radial and due to the increase in area across the foil there was an inherent decrease in the current density. A shock was formed as a result of Ohmic heating (dependent on J(r)) or magnetic forces (dependent on B) such as the Lorentz force. The shock was conical in form; it was estimated to have a velocity of 60km/s and a post shock temperature of approximately 8eV. Results are compared to 3D resistive MHD code simulations. Initial attempts at planar and convergent shock geometries are presented.

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