

Abstract Submitted  
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**End-On Laser Interferometry of Wire Array Z-Pinch Implosions on the MAGPIE Generator** G. SWADLING, S.V. LEBEDEV, S. PATANKAR, A. HARVEY-THOMPSON, F. SUZUKI-VIDAL, G.N. HALL, S.N. BLAND, G. BURDIAK, J.P. CHITTENDEN, P. DE GROUCHY, J. SKIDMORE, L. PICKWORTH, L. SUTTLE, M. BENNETT, R.A. SMITH, Imperial College — End-On interferometric measurements of the electron density distribution of wire array z-pinches has revealed striking differences in the behavior of ablation plasmas. A change in wire material from aluminum to tungsten results in a change from a highly collisional structure dominated by shock formations to a much less collisional regime. Analysis of the results will be presented and comparisons made to both simulations produced using the GORGON MHD code, and calculations of the expected mean-free-path of the plasma. Experiments were carried out on the MAGPIE generator (1.4 MA peak, 240ns rise) at Imperial College, London. A two-color Mach-Zender imaging interferometer was used to collect the data. This uses the 2<sup>nd</sup> and 3rd harmonics (532nm and 355nm) of a pulsed Nd:YAG laser with a pulse duration of ~500ps.

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