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Category Number and Subject:

Theory Experiment

Proton Focusing in a FI Target Compatible Configuration,*

R.B. Stephens, *GA*; A.J. MacKinnon, S.P. Hatchett, M.H. Key, B.F. Lasinski, B. Langdon, P.K. Patel, M. Foord, M. Tabak, R.P.J. Town, S.C. Wilks, *LLNL*; M.S. Wei, F. Beg, S. Chen, R.R. Freeman, J.A. King, J. Pasley, *UCSD*; K. Akli, D. Clark, L. VanWoerkom, *Ohio State U.*; D. Hey, *UC-Davis* – FI targets that use laser-generated proton beams for ignition must protect the proton-generating surface from the imploding shell. The protective case surrounding the surface has the potential to change the ion production efficiency and its focus. We have explored these effects in recent experiments on the Titan laser with a focusing surface embedded in a washer. The proton beam was recorded with a radiochromic film stack. The shadow of a 1000 lpi SEM grid mounted beyond the nominal focus of the proton surface ($\sim 1.8x$ radius of curvature) allowed the calculation of focal point position and size as a function of proton energy. Simultaneous XUV measurements of the heated grid give total proton energy deposited in the grid. Experimental results will be compared to simulations.

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