Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Experiments and Numerical Simulation on a New Hohlraum Configuration with Planar Wire Array Sources at the 1.7 MA Zebra Generator V.L. KANTSYREV, UNR, A.S. CHUVATIN, Ecole Polytech., L.I. RUDAKOV, Icarus Inc., A.S. SAFRONOVA, A.A. ESAULOV, I. SHRESTHA, G.C. OSBORNE, V.V. SHLYAPTSEVA, M.E. WELLER, S.F. KEIM, A. STAFFORD, UNR, B. JONES, R.A. VESEY, SNL — In new hohlraum configuration, multiple mm-size planar wire array (PWA) sources surround a central cavity [B. Jones et al., PRL, v.104 (2010)]. This might provide a hotter hohlraum for ICF than the prior double-ended scheme with cylindrical arrays. The current redistribution in two magnetically decoupled compact Z-pinches (0.75-0.82 MA each) was demonstrated at 1.7 MA UNR Zebra generator. Yield measurements from two cages with PWA sources show that such plasma dissipates the magnetic energy at stagnation as a resistor. For the first time, strong EUV radiation, that time-correlated with sub-keV source bursts, was registered from central cavity. The experimental cavity radiation temperature of 37-45 eV correlates well with 39 eV from VisRaD code (PRISM Co.) simulation. First results of new configuration optimization are reported. The possible applications for 30-60 MA ICF experiments are discussed. This work was supported by NNSA under DOE Coop. Agr. DE-FC52-06NA27586, 06NA27588, and in part by DE-FC52-06NA27616. Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

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Date submitted: 17 Jul 2012 Electronic form version 1.4