Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Analysis for Self-Emission from Spherical Shock Experiments JOHN RUBY, RYAN RYGG, DAVID CHIN, CHAD FORREST, VLADMIR GLEBOV, CHRISTIAN STOECKL, GILBERT COLLINS, Laboratory for Laser Energetics, BENJAMIN BACHMANN, YUAN PING, JIM GAFFNEY, LLNL, NEEL KABADI, PATRICK ADRIAN, PSFC, MIT — Measurements of the self-emission produced by a strong spherically converging shock wave driven by the OMEGA laser are analyzed using a Bayesian model-fitting procedure. Various models are used, including semi-analytic and hydrodynamics codes, and the results are compared. The primary measurements being used to constrain the models include DD neutron production and x-ray self-emission. The systems studied include solid density targets made of deuterated plastic and gas density exploding-pusher targets designed to be hydrodynamic in nature. The model fitting gives insight into the physics mechanisms that dominate the self-emission from these types of experiments. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0003856.

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Date submitted: 27 Jun 2019 Electronic form version 1.4