Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

The KL Mix Model Applied to Directly Driven Capsules on the Omega Laser[1] ROBERT TIPTON, KARNIG MIKAELIAN, HYE-SOOK PARK, LLNL, GUY DIMONTE, LANL, J.R. RYGG, C.K. LI, Plasma Science and Fusion Center, MIT — During the past few years the KL mix model has been applied to a variety of laser capsules with some success. Recently Guy Dimonte has found analytical solutions to the KL equations for the cases of Rayleigh-Taylor (RT) and Richtmyer-Meshkov (RM) instabilities. These analytical solutions not only increase our confidence in the value of the KL equations but also show how to set the seven coefficients of the model so as to match the RT and RM experiments and to maintain the condition of self-similarity[2]. In this talk, results will be presented from the KL mix model applied to a variety of directly driven capsules fired on the Omega laser. The capsules studied include a range in laser drive energy, convergence ratio, ablator thickness and ablator type (CH or SiO_2). In general, the KL calculations using Dimonte's latest coefficients are able to match the DD primary neutron yields, the DT secondary neutron yields as well as the DHe3 proton yields on most of the capsules. [2]See Guy Dimonte, "K-L turbulence model for Rayleigh-Taylor and Richtmyer-Meshkov instabilities" in this conference

[1]This work was performed under the auspices of the U.S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under contract No. W-7405Eng-48

Robert Tipton

Date submitted: 22 Jul 2005 Electronic form version 1.4