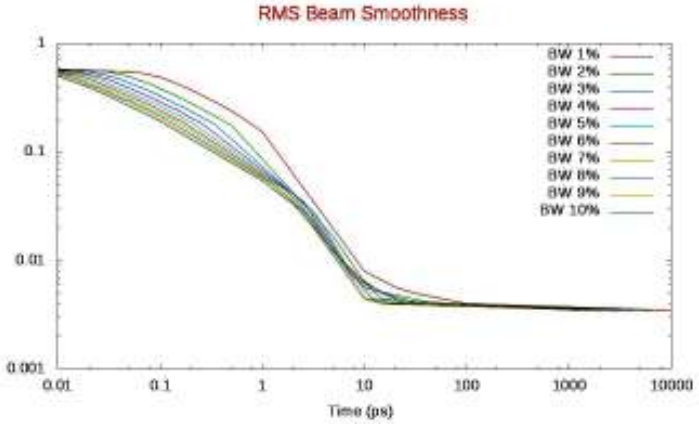
STARDRIVER:
RECENT RESULTS ON BEAM SMOOTHING AND LPI MITIGATION

David Eimerl[1],Stan Skupsky[2], E Michael Campbell[3]
[1]EIMEX, Fairfield, CA, USA
[2]Laboratory for Laser Energtics, Rochester, NY, USA
[3]Sandia National Laboratory, Albuquerque, NM, USA

StarDriver was recently proposed[1] as a flexible laser driver for inertial confinement fusion and high energy density physics. It has the potential to reduce or eliminate all of the deleterious instabilities that occur in direct drive targets. It envisions 10,000 to 100,000 beams each of 10-100 J of energy in an aperture of ~5cm or less in a several times diffraction limited beam. Each beamlet is monochromatic, or potentially has SSD, but the ensemble of lasers has large frequency bandwidth 2%-10%. The beamlets are disposed uniformly in clusters about the target chamber wall. Instabilities are generally ameliorated by the high degree of incoherence in the total laser drive. We report on recent results on beam smoothing for control of hydrodynamic instabilities and LPI mitigation in direct drive targets. Requirements for the number of beamlets and the total bandwidth will be discussed.



[1] David Eimerl, E.Michael Campbell,William F. Krupke,Jason Zweiback,W.L.Kruer, J.Zuegel,J.Myatt,J.Kelly, D.Froula,and R.L.McCrory, "StarDriver: A Flexible Laser Driver for Inertial Confinement Fusion and High Energy Density Physics", Journal of Fusion Energy (2014) **33**, 476-488