

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Measurement of Hot Electron Spatial Distribution Under the Presence of Laser Light Self-focusing in Over-dense Plasmas TSUYOSHI TANIMOTO, KAZUO A. TANAKA, ANLE LEI, TOSHINORI YABUUCHI, HIDEAKI HABARA, KIMINORI KONDO, RYOUSUKE KODAMA, Graduate School of Engineering, Osaka Univ., KUNIOKI MIMA, ILE, Osaka Univ. — In fast ignition (FI) scheme, ultra intense laser (UIL) pulse irradiates an imploded plasma core in order for fast heating via hot electrons generated in laser-plasma interactions. Two important issues are the propagation of forward directed hot electron in the plasma and the spatial divergence of hot electrons. We measured the spatial distribution of hot electrons with different plasma density profiles when UIL pulse creates laser self-focused plasma channel in pre-formed plasma. When the self-focusing occurred, the hot electron number increased and the spatial distribution of hot electrons appeared more collimated . These hot electron distributions may be preferred for a high efficiency core heating in FI scheme.

Tsuyoshi Tanimoto
Graduate School of Engineering, Osaka Univ.

Date submitted: 16 Aug 2007

Electronic form version 1.4