

Abstract Submitted  
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**Ion acceleration and neutron production from intense laser interactions with underdense plasmas using OMEGA EP.**<sup>1</sup> KARL KRUSHELNICK, P. KORDELL, A. MAKSIMCHUK, A. HUSSEIN, A.G.R. THOMAS, L. WILLINGALE, Univ of Michigan - Ann Arbor, C. ZULICK, US Naval Research Laboratory, P. M. NILSON, C. STOECKL, R. S. CRAXTON, Laboratory for Laser Energetics — The interaction of the OMEGA EP short pulse laser beam (up to 1.4 kJ at 10 psec) with underdense preformed plasmas was investigated. Using deuterated plastic targets significant neutron emission was measured using a Time-of-Flight neutron spectrometer. The spectrum of radially accelerated ions was also measured using a Thomson parabola ion spectrometer and was found to be complex, containing many narrow energy spread features. The experimental results are compared with numerical simulations.

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