

Abstract Submitted  
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**Measurements of ablator-ion spectra for preheat and compression studies** N. SINENIAN, J. FRENJE, C.K. LI, F.H. SEGUIN, R. PETRASSO, MIT, J. DELETTREZ, LLE — Measurements of ablator-ion spectra produced at the OMEGA laser facility are presented. The mechanism responsible for the acceleration of these ablator ions is the presence of hot electrons generated by laser-plasma interactions. Modeling, benchmarked by measurements, of the ablator-ion spectra is therefore essential to better understand the generation and transport of these hot electrons and their potentially detrimental effect upon implosion performance. The ablator-ion spectra have been measured routinely by two magnetic charged-particle spectrometers, but these spectrometers cannot always unambiguously separate fast ablator ions with low charge states and slow ablator ions with high charge states. To break this degeneracy, we propose to use a Thomson Parabola Spectrometer that allows for accurate measurements of absolute ablator-proton spectra and more importantly, energy spectra for various charge states of higher-Z ablators such as Carbon. This work was supported in part by DOE, LLE and LLNL.

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