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Observations of Improvement in Conversion Efficiency to Laser Accelerated Protons Using Er-Hydride Coated Targets[1] D. OFFERMANN, L. VAN WOERKOM, R. FREEMAN, The Ohio State University, Columbus, OH, Y. PING, A.J. MACKINNIN, A.G. MACPHEE, M.E. FOORD, J.J. SANCHEZ, N. SHEN, Lawrence Livermore National Laboratory, Livermore, CA, C.D. CHEN, Massachusetts Institute of Technology, Cambridge, MA — Using the Callisto Laser, at LLNL ($8J$, $3 \times 10^{19} W/cm^2$) we have compared proton beams originating from contaminant layers on Gold foil targets with beams from Gold targets coated with ErH_3. Contaminants were removed using an Ar-Ion etching beam. Data was collected using radiochromic film and a Thomson spectrometer. An improvement of 23% in conversion efficiency for protons above $3MeV$ was observed due to ErH_3. LSP simulations agree with this result when assumed that carbon ions in contaminants are predominantly He-like, as seen on the Thomson spectrometer.

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