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**Hot Electron Generation Using High Intensity Laser Pulses on Machined Conical Targets**[1] TAKESHI MATSUOKA, STEPHEN REED, STEPAN BULANOV, VLADIMIR CHVYKOV, FOCUS Center and CUOS, University of Michigan, Ann Arbor, Michigan, ANDREI BRANTOV, VALERY BYCHENKOV, Lebedev Physics Institute, Russian Academy of Sciences, Moscow, GALINA KALINCHENKO, CHRISTOPHER MCGUFFEY, PASCAL ROUSSEAU, VICTOR YANOVSKY, FOCUS Center and CUOS, University of Michigan, Ann Arbor, Michigan, DALE LITZENBERG, Department of Radiation Oncology, University of Michigan, Ann Arbor, Michigan, KARL KRUSHELNICK, ANATOLY MAKSIMCHUK, FOCUS Center and CUOS, University of Michigan, Ann Arbor, Michigan — The relative number of the fast electrons has been experimentally measured for a high intensity ($4x10^{20}W/cm^2$) laser pulse interaction with in situ machined conical aluminum targets. It is shown that the number of electrons and the plasma x-ray signal strongly depends on the cone depth. The cone was laser machined immediately before the 30 TW pulse arrival possibly allowing for a faster, cheaper alternative to traditional conical targets. Particle-in-cell simulations performed for the experimental conditions will be presented. Laser machined conical targets provide a higher laser conversion efficiency into hot electrons.

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Stephen Reed
FOCUS Center and CUOS, University of Michigan, Ann Arbor, Michigan

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