

Abstract Submitted
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Generation and characterization of high-field, short-pulse THz emission from the Berkeley Laser Plasma Accelerator NICHOLAS MATLIS, GUILLAUME PLATEAU, JEROEN VAN TILBORG, CARL SCHROEDER, CAMERON GEDDES, CSABA TOTH, WIM LEEMANS, Lawrence Berkeley National Lab — We present progress on the generation of sub-ps THz pulses in the MV/cm regime from a Laser Plasma Accelerator (LPA) and their use as an accelerator diagnostic. The THz pulses serve the dual purpose of acting as a high-field short pulse source for pump-probe studies as well as a diagnostic of the bunch duration of electrons from the LPA. Characterization of the focused THz spatial and temporal mode properties was done using state-of-the-art electro-optic (EO) sampling methods. A new technique was also implemented which allows single-shot acquisition of the THz spatio-temporal waveform. Preliminary results showing spatio-temporal features of the THz pulses will be presented, as well as a preliminary demonstration of correlation between electron bunch properties and the THz spectrum.

Nicholas Matlis
Lawrence Berkeley National Lab

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