

Intense Broadband THz from FACET at SLAC

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FACET the Facility for Advanced Accelerator Experiment Tests is a user facility offering short, intense bunches 3 nC at 23 GeV, compressed to 60 fs RMS of electrons (and positrons in future years), primarily for studies of plasma-wakefield acceleration. Some 10 m upstream of this experiment, the beam generates intense coherent transition radiation when passing through a 1-micron-thick titanium foil. Depending on compressor settings, THz pulses of over 0.5 mJ have been measured in a broad emission spectrum peaking at 0.5 THz. We will report on measurements characterizing this source, and on plans for a 40-m-long transport line to bring the light out of the tunnel to a user hutch that will also house a synchronized femtosecond Ti:Sapp laser for pump-probe experiments.