

Speed Poster: Simulations of the IR/THz Options at PITZ (High-gain FEL and CTR)

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The Photo Injector Test facility at DESY, Zeuthen site (PITZ), develops high brightness electron source for modern linac-based Free Electron Lasers (FELs). The PITZ accelerator can be considered as a proper machine for the development of an IR/THz source prototype for pump and probe experiments at the European XFEL. The radiation generated by high-gain FEL and Coherent Transition Radiation (CTR) have been considered and studied. Start-to-End simulations for a high-gain FEL and a CTR with electron beams produced by the PITZ accelerator have been performed. Since at PITZ the parallel operation of two photocathode laser systems capable of producing cylindrical and 3D-ellipsoidal laser pulses is foreseen, the simulations have been also done with these two different temporal laser profiles for comparison. The preliminary simulation results are presented and discussed in this contribution.

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