

Abstract Submitted
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Narrow bandwidth Thomson photon source development using Laser-Plasma Accelerators¹ C.G.R. GEDDES, J. VAN TILBORG, H.-E. TSAI, CS. TOTH, J.-L. VAY, R. LEHE, C.B. SCHROEDER, E. ESAREY, LBNL, S.G. RYKOVANOV, Jena, D.P. GROTE, A. FRIEDMAN, LLNL, W.P. LEEMANS, LBNL — Compact, high-quality photon sources at MeV energies are being developed based on Laser-Plasma Accelerators (LPAs). An independent scattering laser with controlled pulse shaping in frequency and amplitude can be used together with laser guiding to realize high photon yield and narrow bandwidth. Simulations are presented on production of controllable narrow bandwidth sources using the beam and plasma capabilities of LPAs. Recent experiments and simulations demonstrate controllable LPAs in the energy range appropriate to MeV Thomson sources. Design of experiments and laser capabilities to combine these elements will be presented, towards a compact photon source system. A dedicated facility under construction will be described.

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