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High-efficiency gamma-ray flash generation from multiple-laser scattering ZHENG GONG, Peking University, China, S. S. BULANOV, LBNL, A. AREFIEV, Univ of California - San Diego, X. Q. YAN, Peking University, China — Gamma-ray flash generation in a near-critical-density target irradiated by four symmetrical colliding laser pulses is numerically investigated. With peak intensities about 10^{23} W/cm^2, the laser pulses boost electron energy through direct laser acceleration, while pushing them inward with the ponderomotive force. After backscattering with counter-propagating laser, the accelerated electron is trapped in the electromagnetic standing waves of the ponderomotive potential well created by the coherent overlapping of the laser pulses. Electrons emit gamma -ray photons in a multiple-laser-scattering regime, where the electrons act as a medium transferring energy from the laser to gamma-rays in the ponderomotive potential valley [Z. Gong et al, PRE 95, 013210 (2017)].

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