

Abstract Submitted
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Anomalous Transmission through Thin Al Foils Driven by High Contrast Ultra-intense Laser¹ T. MATSUOKA, T. LIN², S. REED, A. MAK-SIMCHUK, CUOS, U. of Michigan, A.A. BATISHCHEVA, Delta Search Labs., J. FOX, O.V. BATISHCHEV, MIT, V.YU. BYCHENKOV, P. N. Lebedev Phys. Inst. — The light transmittance of 0.01% through 0.8 μm thick Al foils at a wavelength of 527 nm was measured by illuminating frequency doubled 400fs duration laser pulses at an intensity of 2×10^{19} W/cm². Relativistic electrons generated in the interaction could emit radiation due to the “transition radiation” or newly considered process “Larmor radiation in sheath field.” These two processes are compared with experimental results from T³ laser system and kinetic simulations of laser pulse interaction with a foil using adaptive PIC-Vlasov hybrid code.

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