

TOWARD LOW ENERGY NUCLEAR PHYSICS WITH TERAWATT LASERS

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We consider feasibility to make nuclear related studies using table-top terawatt femtosecond lasers. The key emphasis is on such processes as photo induced near threshold nuclear reactions and positron production. We present numerical simulations using GEANT 4.0 package supporting our estimates. We also present our experimental study of gamma production at laser intensities of 10^{18} W/cm². Special technique with artificial prepulse allows generating gammas with energies up to 10 MeV.