Abstract Submitted
for the DAMOP12 Meeting of
The American Physical Society

Non-linear Compton Scattering in Short Laser Pulses[1]
KATARZYNA KRAJEWSKA, JERZY KAMIŃSKI, Institute of Theoretical Physics, University of Warsaw — The generation of short X-ray laser pulses attracts a great deal of attention. One of mechanisms to achieve this goal is the non-linear Compton scattering at very high laser powers. The majority of previous works on the non-linear Compton scattering have been devoted to the case when the incident laser field is treated as a monochromatic plane wave. There is, however, recent interest in analyzing the effect of a pulsed laser field on the non-linear Compton scattering [1-4]. We study the process for different durations of the incident laser pulse and compare it with the results for both a plane wave laser field and a laser pulse train.

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[1]This work is supported by the Polish National Science Center, under Grant No. UMO-2011/01/B/ST2/00381.

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Date submitted: 26 Jan 2012 Electronic form version 1.4