## Abstract Submitted for the DPP14 Meeting of The American Physical Society

Absorption of high-contrast, intense short laser pulses on solids<sup>1</sup>

ANDREAS KEMP, LAURENT DIVOL, LLNL — We study the interaction of a 10J / 100fs intense laser pulse with solid aluminum using 1D and 2D kinetic / collisional particle simulations. In particular we are interested in an accurate description of the early phase of the interaction where the target is still cold, assuming that no plasma formation has set in before the arrival of the pulse. While most of the laser pulse is reflected, penetration of light into the skin layer and collisional heating lead to fast heating of the skin layer, and an increasing absorption of light into several groups of energetic electrons. We discuss details of the resulting electron spectrum, and plasma conditions expected immediately behind the interaction region under realistic conditions.

<sup>1</sup>This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Security, LLC, Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344

Andreas Kemp LLNL

Date submitted: 02 Jul 2014 Electronic form version 1.4