effect of fast electrons on the compression and burning of the laser fusion targets

1Gus’kov S.Yu., 2Zmitrenko N.V., 1,2Kuchugov P.A., 1Yakhin R.A.

1Lebedev Physical Institute of RAS, Moscow, Russia,  
2Keldysh Institute of Applied Mathematics of RAS, Moscow, Russia, [zmitrenko@imamod.ru](mailto:zmitrenko@imamod.ru)

On the base of the theoretical and numerical analysis, simulations of an influence of an origin and a propagation in a medium the super thermal electrons emerge under a high intensity laser irradiation (more than Iλ2 = 1014 W/cm2∙µm2) action onto inertial confinement fusion (ICF) targets At the cases, corresponding such an action one can see, that the fast electron action leads up to the dramatic effects conclude in no efficiency of the thermonuclear fuel compression due to a significant “preheating” of the internal target shells by the fast electrons. In given work we discuss the models to be adequate for a description of such the processes, indicate some numerical experiments results and so on. We propose some ICF target construction, which will be significantly robust and reliable under processes of a super thermal electrons production due to laser irradiation absorption.