

The model of energy transport in turbulent laser plasma of porous targets

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Abstract.

A low density porous cover on the laser target could smooth the perturbations of ablation pressure. A number of laser fusion laboratories carry out the studies of power laser pulse interaction with low density porous targets ([1-3]).

We propose a physical-mathematical model of energy transport in turbulent plasma of porous target irradiated by laser pulse. 2D numerical simulations have been made with help of Lagrange code "ATLANT" [4]. A good agreement between numerical results and experimental data from "PALS"-facility (Prague Asterix Laser System, Czech republic) has been got [5]. Using this model it has been possible to explain some challenging phenomena, which have been observed at "PALS" experiments.

The porous of such target can be filled by deuterium-tritium (DT) liquid mixture. Our numerical simulations show that such target could produce neutron flows much higher (approximately in 10^2 times) then the layer of pure DT ice.

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