**visualization of ion trajectories in a dense plasma CALCULATED BY MONTE CARLO METHOD**

Golyatina R.I., 1Kodanova S.K., 1Ramazanov T.S., and Maiorov S.A.

Prokhorov Institute of General Physics, Russian Academy of Sciences, Moscow, Russia,  
 [mayorov\_sa@mail.ru](mailto:mayorov_sa@mail.ru)  
1Institute of Experimental and Theoretical Physics, Al-Farabi Kazakh National University,  
 Almaty, Kazakhstan, [kodanova@mail.ru](mailto:kodanova@mail.ru)

Recently, a large number of theoretical and experimental studies of the physical processes that determine the construction of a thermonuclear target and the required parameters of a future driver carried out [1–2]. The calculation of a thermonuclear target parameters for heavy ion inertial fusion requires adequate quantitative description of processes of heavy ion interaction with a dense plasma in a wide range of parameters. Therefore, in order to know the properties of the dense plasma under different conditions, the most attractive way is a computer experiment, which provides answers to many important questions necessary for the use of ICF dense plasma at energy issues.

Currently, there are a lot of programs allowing to carry out simulation of ion implantation process in the solids without having to experiment. Simulation comes with a certain proportion of the error and is not able to fully replace real experiments, but the results have provided invaluable research assistance. The best-known programs are the SRIM (The Stopping and Range of Ions in Matter) [3] and Geant4 [4].

In this paper, Monte Carlo simulated trajectories of ions in a dense plasma of inertial confinement fusion. The main advantage of the calculation of the Monte Carlo method is that it allows you to take into account any physical process directly. For example, local and non-local inelastic energy losses, bond energy between atoms replacing collision and so on. In addition, it is possible to obtain accurate solutions for multi-target and multi-layered targets for complex geometry that allows you to simulate the actual interaction of plasma with the ion beam.

The result of computer simulation are numerical data on the dynamic characteristics, such as energy loss, the average scattering angle, penetration depth, the effective range of the particles. Also, according to the results of the work was created program of the 3D visualization of the ion trajectories in a dense plasma of inertial confinement fusion.

This research was funded under the target program SRW №0115РК01011 "Development of informational-program package for modeling and visualization of dense plasma properties in inertial confinement fusion for 2015-2017" from the Ministry of Education and Science of the Republic of Kazakhstan.

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