

PLASMA OSCILLATIONS INFLUENCE ON ION-FLUX PROPAGATION IN SEPARATOR LAPLACE 1*

V.S. SMIRNOV¹, S. KISLENKO^{2,1}, G. LIZIAKIN^{2,1}, A. GAVRIKOV^{2,1}

¹ Moscow Institute of Physics and Technology (State University), Moscow, Russia

² Joint Institute for High Temperatures of the Russian Academy of Sciences, Moscow, Russia

We propose a numerical model for ion beam mass-separation in plasma. The model parameters are based on an experimental setup Laplace 1 for spent nuclear fuel mass separation [1]. We use Particle-in-cell method with Monte-Carlo collisions to simulate background plasma [2]. Gyrokinetic model for electron component is used to boost calculations [3]. Ion component motion is simulated with a classical Boris scheme [4]. The ion flux propagation in a background plasma is simulated in a single-particle approximation. We investigate oscillations of background plasma obtained via numerical model. They are in a good agreement with experimental results. We obtain the results on the ion separation in a background plasma and study the impact of plasma oscillations on a quality of ion separation.

This study was supported by the Russian Science Foundation № 21-19-00716, <https://rscf.ru/en/project/21-19-00716/>.

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* The work was supported by the Russian Science Foundation № 21-19-00716, <https://rscf.ru/en/project/21-19-00716/>.