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Particle Simulation of the Blob Propagation in Non-Uniform Plasmas[1] HIROKI HASEGAWA, SEIJI ISHIGURO, National Institute for Fusion Science — The kinetic dynamics on blob propagation in non-uniform plasmas have been studied with a three dimensional electrostatic plasma particle simulation code. In our previous studies, we assumed that grad-B is uniform in the toroidal and poloidal directions. In scrape-off layer (SOL) plasmas of real magnetic confinement devices, however, the direction of grad-B is different between the inside and the outside of torus. In this study, we have investigated the blob kinetic dynamics in the system where grad-B is spatially non-uniform. We observe different potential and particle flow structures from those shown in our previous studies. Thus, it is found that propagation properties of blobs in non-uniform grad-B plasmas are also distinct. These properties depend on the initial blob location in the toroidal directions. We will also discuss the application of this study to pellet dynamics.

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