

Abstract Submitted  
for the DPP16 Meeting of  
The American Physical Society

**Configuration of Self-consistent Flows in a Hole Structure**<sup>1</sup> HIROKI HASEGAWA, SEIJI ISHIGURO, National Institute for Fusion Science, National Institutes of Natural Sciences — Self-consistent particle flows in a hole structure have been studied with a three dimensional electrostatic plasma particle simulation code. In our previous study, we investigated kinetic effects on plasma blob dynamics with the particle simulation code<sup>2,3</sup>. In this study, we have improved the code in order to investigate the hole propagation dynamics. Here, the hole is the intermittent filamentary structure along the magnetic field line in peripheral plasmas of fusion magnetic confinement devices and the plasma density in the hole is lower than that of background plasma. In the simulation, a hole structure is initially set as a cylindrical form elongated between both end plates and propagates in the grad-B direction. The simulation confirms that a spiral current system is formed in a hole structure. Further, the investigation into the effect of impurities on the flow configuration will be reported.

<sup>1</sup>Supported by NIFS Collaboration Research programs (NIFS15KNSS058, NIFS14KNXN279, NIFS15KNTS039, NIFS15KNTS040, and NIFS16KNTT038).

<sup>2</sup>H. Hasegawa and S. Ishiguro, *Phys. Plasmas* **22**, 102113 (2015).

<sup>3</sup>H. Hasegawa and S. Ishiguro, 57th APS-DPP meeting, TP12.147 (2015).

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Date submitted: 29 Aug 2016

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