

Abstract Submitted
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Formation of Non-Monotonic Potential Structure in the Detached Plasma¹ SEIJI ISHIGURO, National Institute for Fusion Science, NINS and SOKENDAI, THEERASARN PIANPANIT, SOKENDAI, HIROKI HASEGAWA, National Institute for Fusion Science, NINS and SOKENDAI — Plasma detachment has been investigated by means of PIC simulation which includes plasma-neutral collision and Coulomb collision. In our previous study, we have shown that a strong gradient in temperature appears in front of the target plate in the case that high density and low temperature neutral gas is introduced.² It is observed that a potential hill is created in the neutral gas region where ions lose energy due to the elastic and charge exchange collision and, as a result, the ion density increases. This potential structure traps the low energy electrons and may play a role in the development of plasma detachment state.

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²T. Pianpanit et al. Plasma and Fusion Res. **11**, 2403040 (2016).

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