

Abstract Submitted
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Time evolution of the particle and heat flux of the detached plasma¹ THEERASARN PIANPANIT, SOKENDAI, SEIJI ISHIGURO, HIROKI HASEGAWA, NIFS, NINS and SOKENDAI — The detached plasma is a regime when the particle and heat flux of the plasma are largely reduced before reaching the divertor target. Linear devices experiment data show that when the neutral gas pressure in front of the target increases the heat flux to the target largely decreases. The 1D-3V particle simulation with Monte Carlo collision and cumulative scattering angle Coulomb collision has been developed to study the kinetic effect of the detached plasma². The simulation was performed with the constant temperature and pressure of neutral gas in front of the target. A large decrease in the electron temperature from 5eV to below 1 eV follows a large decrease in the ion temperature inside the neutral gas area in the case with high neutral gas pressure in front of the target. The energy flux at the target decreases in the process of attaining the detached state.

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²2. T. Pianpanit, S. Ishiguro, and H. Hasegawa, Plasma Fusion Res. **11**, 2403040 (2016)

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