

Predictive Simulation of Pellet Injection in a Small Tokamak in Thailand

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Integrated predictive modeling code TASK/TR is used to investigate the impact of pellet injection in Thailand future tokamak. In the core region, plasma profiles are predicted by a combination of the current diffusive ballooning transport model and neoclassical transport. The pellet ablation in the background plasma is described using the neutral gas shielding model with the ∇B drift effects included. Pellets were launched from various directions into ohmic and auxiliary heated plasmas. It is found that the pellet injection can result in the increasing central density and the decreasing temperatures at the edge. Due to ∇B drift effect, launching the pellets from the high-field-side yields deeper penetration depth than the injection from the vertical and low-field-sides of the tokamak. The results suggest that the pellet injection proves to be an efficient method for refueling in tokamaks.

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