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Simulation for heat flux mitigation by gas puffing in KSTAR[1] SEUNG BO SHIM, Pusan National University, VLADISLAV KOTOV, Fz-Juelich, SUK-HO HONG, National Fusion Research Institute, REITER DETLEV, Fz-Juelich, JIN YONG KIM, National Fusion Research Institute, YONG SU NA, Seoul National University, HAE JUNE LEE, Pusan National University — Control of heat flux is very important to achieve high performance long pulse operation in tokamaks. There are so many efforts to reduce the heat flux like change of divertor structure, snowflake divertor, and RMP, etc. Detachment by gas puffing is used for long time to reduce the heat flux. In this paper edge plasma scenarios of KSTAR are analyzed numerically by well-known B2-Eirene code package(SOLPS4.3). High performance discharges with heating power ≈ 8 MW and core flux $\approx 10^{21}$ s^{-1} is used. Gas puffed on the outer mid-plane(OMP), both divertors is likely to stay attached. So, gas puffed on the outer target, one is near the private flux region(PFR) and the other is near the scrape-off-layer(SOL). When gas puffed near the SOL is still attached, and it is worse than gas puff from OMP because it is too close to cryo-pump. The case near the PFR shows high recycling region easily compared with OMP case. When one forth gas puffed on the PFR, results are similar with OMP case. But it is still not good for detachment operation. Detachment operation window is too small for the gas puffing on the PFR.

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