Abstract Submitted
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SOLPS-ITER simulations of ITER divertor operation with high flux expansion[1] J.M. CANIK, ORNL, X. BONNIN, R.A. PITTS, ITER Organization, J.D. LORE, ORNL, Y. GRIBOV, ITER Organization, A.A. KAVIN, NFIIEA, Saint Petersburg, Russia, V.E. LUKASH, R.R. KHAYRUTDINOV, NRC Kurchatov Institute, Moscow, Russia — The ITER divertor has been designed based on a large set of 2D fluid plasma/kinetic neutral transport simulations using SOLPS [1], identifying a window in divertor neutral pressure with heat fluxes reduced to acceptable levels. Recently a new magnetic equilibrium has been calculated with higher divertor flux expansion, with the magnetic field angle at the outer strike point reduced from 2.7^{o} in the standard configuration to 1.5^{o} (not accounting for toroidal shaping of the divertor tiles). SOLPS-ITER [2] simulations have been performed in this new geometry to evaluate the impact on divertor operations. The calculations indicate a reduction in the peak heat flux to the outer target by ˜40%, consistent with the increase in flux expansion. The simulations also indicate that heat flux mitigation can be achieved at reduced divertor neutral pressure compared to the standard configuration. The potential benefits of this configuration for power handling, including the prospects for reducing heat flux with narrow scrape-off-layer widths, will be presented.[1] Kukushkin *et al.*, Nucl. Fusion **43** (2003) 716. [2] Wiesen *et al.*, J. Nucl. Mat. **463** (2015) 480.

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