Abstract Submitted
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Reduction in resonant magnetic field induced heat flux splitting caused by detachment of the divertor[1] A.R. BRIESEMEISTER, J.-W. AHN, D.L. HILLIS, J.D. LORE, M.W. SHAFER, E.A. UNTERBERG, A. WINGEN, ORNL, O. SCHMITZ, H. FRERICHS, U. Wisc., M.A. MAKOWSKI, A.G. MCLEAN, LLNL, N.M. FERRARO, GA — Measurements in DIII-D show that in high-density detached divertor conditions, the inter-ELM non-axisymmetric heat flux striations generated by resonant magnetic perturbations (RMPs) are eliminated. Non-axisymmetric heat loads caused by the RMP fields used to mitigate ELMs could reduce the lifetime of divertor components in ITER and future devices. It is shown that for RMPs with an n=3 toroidal mode number low levels of gas puffing can cause an increase in the heat flux splitting, but at high densities where the divertor becomes detached this splitting is eliminated. VUV imaging and 2D divertor Thomson scattering are used to measure RMP induced perturbations to the plasma conditions above the target plates. Modeling performed with the 3D fluid transport code EMC3-EIRENE both with and without the plasma response calculated by M3D-C1 is compared to the measured divertor conditions.

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