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Role of Poloidal E×B Convection on Divertor Heat Transport in DIII-D[1] AARO JAERVINEN, STEVE ALLEN, MAX FENSTERMACHER, ADAM MCLEAN, THOMAS ROGNLIEN, CAMERON SAMUELL, Lawrence Livermore Natl Lab, ANTHONY LEONARD, AUNA MOSER, General Atomics, MATHIAS GROTH, Aalto University — Simulations for DIII-D high confinement mode plasmas with the fluid code UEDGE show a strong role of poloidal $\mathbf{E}\times\mathbf{B}$ drifts on the divertor heat transport. These findings challenge the paradigm of conduction-limited scrape-off layer (SOL) transport, which is a standard assumption in analytic calculations of divertor power exhaust, such as in [1]. While simulations without drifts are well aligned with this assumption, simulations with drifts show that the poloidal $\mathbf{E} \times \mathbf{B}$ flow dominates the divertor heat transport in both attached and detached conditions. This study has identified, for the first time, the important contribution of $\mathbf{E} \times \mathbf{B}$ drifts to the strong convective heat flow in detached conditions in DIII-D previously reported in [2]. The impact of the convective $\mathbf{E} \times \mathbf{B}$ flows on the radiated power density scaling in the divertor will also be discussed. [1] R.J. Goldston, et al. Plasma Phys. Control. Fusion 59 (2017) 055015 [2] A.W. Leonard, et al. Phys. Rev. Lett. 78 (1997) 4769 4772

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