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Parallel Energy Transport in Detached DIII-D Divertor Plasmas A.W. LEONARD, General Atomics, J.D. LORE, J.M. CANIK, ORNL, A.G. MCLEAN, M.A. MAKOWSKI, LLNL — A comparison of experiment and modeling of detached divertor plasmas is examined in the context of parallel energy transport. Experimental estimates of power carried by electron thermal conduction versus plasma convection are experimentally inferred from power balance measurements of radiated power and target plate heat flux combined with Thomson scattering measurements of the T_e profile along the divertor leg. Experimental profiles of T_e exhibit relatively low gradients with $T_e < 15$ eV from the X-point to the target implying transport dominated by convection. In contrast, fluid modeling with SOLPS produces sharp T_e gradients for $T_e > 3$ eV, characteristic of transport dominated by electron conduction through the bulk of the divertor. This discrepancy with experimental transport dominated by convection and modeling by conduction has significant implications for the radiative capacity of divertor plasmas and may explain at least part of the difficulty for fluid modeling to obtain the experimentally observed radiative losses. Comparisons are also made for helium plasmas where the match between experiment and modeling is much better. *Work supported by the US DOE under DE-FC02-04ER54698.

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