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Reduced Transport in Negative and Weak Shear Discharges in DIII–D,[1] B.W. STALLARD, T.A. CASPER, B.W. RICE, Lawrence Livermore National Laboratory, C.M. GREENFIELD, D.P. SCHISSEL, H.E. ST. JOHN, K.H. BURRELL, J.C. DEBOO, P. GOHIL, R.J. GROEBNER, L.L. LAO, General Atomics, E.A. LAZARUS, Oak Ridge National Laboratory, C.L. RETTIG, University of California, Los Angeles — In DIII–D strongly reduced core transport has been observed in both L–mode and H–mode plasmas having negative or weak core magnetic shear and q >1. Accompanied by decreased core fluctuations as measured by BES and FIR scattering diagnostics, the reduced transport is at or below calculated ion neoclassical levels for the ion energy channel, extending over the entire discharge in some H–mode cases. Smaller reductions are observed for ion angular momentum transport. A small decrease in electron energy transport is observed in some discharges. For the L–mode significant particle transport reduction occurs above a power threshold. Important experimental variables for these discharges are magnetic shear, r_{qmin}, the radius of shear reversal, and shear in the E × B flow. The dependence of transport on these parameters and comparisons with model simulations will be discussed.

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[X] Prefer Oral Session
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