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Computational Study of Poloidal Angular Momentum Transport in DIII-D[1] ALEXEI PANKIN, SCOTT KRUGER, Tech-X Corp., ARNOLD KRITZ, TARIQ RAFIQ, Lehigh U., JAN WEILAND, Chalmers U., Sweden — The new Multi-Mode Model, MMM8.1, includes the capability to predict the anomalous poloidal momentum diffusivity [T. Rafiq, *al.*, Phys. Plasmas 20, 032506 (2013)]. It is important to consider the effect of this diffusivity on the poloidal rotation of tokamak plasmas since some experimental observations suggest that neoclassical effects are not always sufficient to explain the observed poloidal rotation [B.A. Grierson *et al.*, Phys. Plasmas 19, 056107 (2012)]. One of the objectives of this research is to determine if the anomalous contribution to the poloidal rotation can be significant in the regions of internal transport barriers (ITBs). In this study, the MMM8.1 model is used to compute the poloidal momentum diffusivity for a range of plasma parameters that correspond to the parameters that occur in DIII-D discharges. The parameters that are considered include the temperature and density gradients, and magnetic shear. The role of anomalous poloidal transport in the possible poloidal spin up in the ITB regions is discussed. Progress in the implementation of poloidal transport equations in the ASTRA transport code is reported and initial predictive simulation results for the poloidal rotation profiles are presented.

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Alexei Pankin
Tech-X Corp.

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