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Neoclassical Viscosities and Anomalous Flows in Stellarators[1] A.S. WARE, University of Montana, D.A. SPONG, Oak Ridge National Laboratory — We discuss initial work to use neoclassical viscosities calculated with the PENTA code [1,2] in a transport model that includes Reynolds stress generation of flows [3]. The PENTA code uses a drift kinetic equation solver to calculate neoclassical viscosities and flows in general three-dimensional geometries over a range of collisionalities. The predicted neoclassical viscosities predicted by PENTA can be flux-surfaced average and applied in a 1-D transport model that includes anomalous flow generation. This combination of codes can be used to test the impact of stellarator geometry on anomalous flow generation.

[1] D. A. Spong, Phys. Plasmas **12**, 056114 (2005).
[2] D. A. Spong, Fusion Sci. Technology **50**, 343 (2006).
[3] D. E. Newman, et al., Phys. Plasmas **5**, 938 (1998).

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