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**Momentum transport in Taylor-Couette flow with vanishing curvature** BRUNO ECKHARDT, HANNES BRAUCKMANN, MATTHEW SALEWSKI, Philipps-Universitaet Marburg — We study the influence of system rotation on torque and on mean angular momentum profiles in turbulent Taylor-Couette flow for large cylinder radii in direct numerical simulations. In this limit, curvature effects that can cause a stabilization of the outer flow region become negligible. We find that the torque as a function of the system rotation shows two maxima at a shear Reynolds number of  $2 \times 10^4$ . The broad torque maximum for a moderate system rotation is related to strong turbulent Taylor vortices. A model based on marginal stability of boundary layers reproduces this torque maximum. The comparison between our simulations and the model suggests that the second torque maximum at weak system rotation is caused by the transition to turbulent boundary layers.

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