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Torque scaling between independently rotating cylinders in turbulent Taylor-Couette flow DENNIS VAN GILS, DANIELA NAREZO, SANDER HUISMAN, CHAO SUN, DETLEF LOHSE, University of Twente — The Twente Turbulent Taylor-Couette (T³C) system allows for a 20 Hz rotation rate of the inner cylinder and 10 Hz rotation rate of the outer cylinder. The corresponding maximum Reynolds numbers for the inner and outer cylinder are $Re_i = 2.0 \times 10^6$, and $Re_o = 1.4 \times 10^6$, respectively. The system has a radius ratio of 0.716 and an aspect ratio of 11.68, and the end plates are attached to the outer cylinder. We measured the global torque (G) as a function of the inner and outer cylinder Reynolds numbers in the unexplored parameter space of co- and counter-rotation.

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