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Local bubble distribution in bubbly turbulent Taylor-Couette flow DANIELA NAREZO, DENNIS VAN GILS, CHAO SUN, DETLEF LOHSE, University of Twente — In turbulent Taylor-Couette flow, the injection of bubbles reduces the global drag on the cylinder surfaces. The previous bubbly turbulent drag reduction measurements in TC flow were mainly based on the global torque, which is not sufficient to understand the mechanism of bubbly drag reduction. One of the key issues is the actual bubble distribution inside the TC gap. Using optical fibers placed inside the TC gap, we scanned the local bubble distribution in the radial direction. An extension of this technique is a four-point optical fiber probe, which enables to retrieve the bubble velocity vector and aspect ratio.

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