

Abstract Submitted  
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**Effect of polymer additives on bulk turbulence**<sup>1</sup> HENG-DONG XI, HAITAO XU, EBERHARD BODENSCHATZ, Max-Planck Institute for Dynamics and Self-organization, Goettingen, D-37077 Germany — In recent years, there is a rising interest on the effect of polymer additives on homogeneous and isotropic turbulence. We investigate experimentally the effect of minute high-molecular-weight polymers on the bulk turbulence. The experiments are carried out in a fully developed turbulent von Karman flow between two counter-rotating baffled disks. Using the three-dimensional Lagrangian Particle Tracking technique, we follow simultaneously many tracer particles seeded in the flow, from which we extract both Eulerian and Lagrangian statistics of the turbulence. We report the results from independently varying the control parameters: the Reynolds number, the Weissenberg number, and the polymer concentration in our experiments, with the focus on the last two.

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