

Abstract Submitted
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Experimental Measurement of Single-Particle Dispersion in High Reynolds Number Turbulence¹ KELKEN CHANG, HAITAO XU, NICHOLAS OUELLETTE, LASSP, Cornell University, MICKAEL BOURGOIN, Laboratoire des Ecoulements Geophysiques et Industriels, CNRS, France, EBERHARD BODENSCHATZ², Max Planck Institute for Dynamics and Self-Organisation, Goettingen, Germany, INTERNATIONAL COLLABORATION FOR TURBULENCE RESEARCH COLLABORATION — We report Lagrangian measurements of single-particle dispersion in a high Reynolds number (up to a Taylor microscale Reynolds number of $R_\lambda = 815$) turbulence experiment. The motion of tracer particles is followed optically in three dimensions using multiple high speed cameras. Such direct measurement is not possible from Eulerian techniques. We compare our measurements with previous experimental data, stochastic models and DNS. This work is supported by the National Science Foundation and the Max Planck Society.

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