

Abstract Submitted  
for the DFD14 Meeting of  
The American Physical Society

**On the Degeneration of Turbulence at High Reynolds Numbers**

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Max Planck Institute for Dynamics and Self-Organization — Turbulent fluctuations in a fluid wind down at a certain rate once stirring has stopped. The role of the most basic parameter in fluid mechanics, the Reynolds number, in setting this decay rate is not generally known. This talk concerns the high-Reynolds-number limit of the process. In a wind-tunnel experiment that reached higher Reynolds numbers than ever before and covered more than two decades in the Reynolds number ( $10^4 < Re = UM/\nu < 5 \times 10^6$ ), we measured the decay rate with the unprecedented precision of about 2%. Here  $U$  is the mean speed of the flow,  $M$  the forcing scale, and  $\nu$  the kinematic viscosity of the fluid. We observed that the decay was Reynolds number independent, which contradicts some models and supports others.

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Date submitted: 01 Aug 2014

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