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Decay of grid turbulence in a closed box STPHANE PERRARD, WILLIAM IRVINE, James Franck Institute, University of Chicago, IRVINE'S LAB TEAM — We investigate the decay of a turbulent flow in the absence of mean flow. By accelerating a square grid in a water tank, we generate an array of wakes that induces a 3 dimensional turbulent flow with a Reynolds number of about Re $\approx 5\times10^4$. After the impulse excitation (about 100ms), a decay in time of this turbulent flow is observed. The entire decay process lasts for hours while the dissipative length rises up through scales over time. We follow and characterize both in space and time this turbulent decay process through several decades.

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