

# Shocking Turbulence

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Air seeded with olive oil droplets flows through a square fractal grid ( $\sigma = 0.21$ ), generating a zone of freely shearing turbulence across a shock tube. A shock wave ( $Ma = 1.2$ ) impulsively accelerates the turbulent zone, increasing its kinetic energy.

The turbulence moves along the shock tube at 100 m/s until it is suddenly stalled by the 400 m/s reflected shock wave pictured right. The reshock decelerates the zone while dramatically increasing its turbulent kinetic energy.

Dual-pulsed laser sheets illuminate the midplane of the shock tube at the instant of reshock interaction. Particle image velocimetry reveals the evolving dynamics *to help us understand how shock waves affect turbulent structures.*