



Experimental study of inertial particles in fully developed turbulence

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Using a Lagrangian Particle Tracking (LPT) technique, we measured velocity and acceleration statistics of passive tracer particles, both single and multiple particle statistics, in a von Kármán swirling water flow generated between counter-rotating baffled disks. We extend the LPT technique to study inertial particles in the same flow. The Taylor micro-scale Reynolds number R_λ investigated ranges up to 500 and the Stokes number of the inertial particles varies between 0 and 1. We report measurements of acceleration and velocity statistics of single inertial particle and the relative velocity between two inertial particles, and compare our results with recent numerical simulations and experimental data.

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