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Neutral and inertial particle acceleration in non isotropic turbulent flows ARMANN GYLFASON, Reykjavik University, MICHEL VAN HINSBERG, Eindhoven University of Technology, CHUNG-MIN LEE, California State University - Long Beach, FEDERICO TOSCHI, Eindhoven University of Technology
— Turbulent fluctuations influence the dynamics of particulate matter by accelerating the dispersions and mixing of particles. In several natural and industrial flows turbulent fluctuations are strongly coupled to the presence of intense and anisotropic mean flows. The flows that we study here are homogeneous shear and homogeneous strain turbulence. In these flows the dispersion of particles is strongly influenced by gradients in the mean velocity. A comparison of single particle properties, such as acceleration and velocity variances, and time correlations are presented to illustrate the particle dynamics under such conditions.

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