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Statistics of preferential particle concentration in free-surface[1]
JASON LARKIN, WALTER GOLDBURG, University of Pittsburgh, MAHESH BANDI, Center for Nonlinear Studies and Condensed Matter & Thermal Physics Group, Los Alamos National Laboratory — Particles floating on a turbulent surface of water cluster into temporally complex patterns. We experimentally study the statistics of this preferential particle concentration for various Reynolds numbers, for both transient and steady-state dynamics. The probability density function for particle concentration exhibits a power-law with an exponential cut-off. We will discuss our preliminary analysis as to how this distribution depends upon the Reynolds number and the spatial-scale r at which the system is coarse-grained.

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