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3D reconstruction of flat, anisotropic particles in turbulence[1]
THERESA OEHMKE, University of California, Berkeley, GAUTIER VERHILLE, Institute de Recherche sur les Phnomnes Hors Equilibre, EVAN VARIANO, University of California, Berkeley — The past few years of research have seen a significant advancement in the understanding of inertial particles in turbulence. Understanding particle motion in turbulent flow is important for both industrial and environmental applications such as turbulent drag-reduction and the locomotion of planktonic organisms in the ocean. Research in this area has focused mainly on fibers, with some groups looking into the motion of low aspect ratio particles. Here, we investigate the motion of flat, non-axisymmetric particles. We present a method for the 3D reconstruction of flat particles. Using this method, we are able to recreate the particle orientation over time, which gives us insight into the evolution of a particle's tumbling and spinning and the influence of the particle shape on its rotation.

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