

Abstract Submitted
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How is the eigenframe of the rate-of-strain tensor perturbed by density gradients? DOMINIQUE FRATANTONIO, CHRIS LAI, JOHN CHARONKO, KATHY PRESTRIDGE, Los Alamos National Laboratory — We present an experimental study on a variable-density turbulent jet. The jet's three-dimensional density and velocity fields have been reconstructed using a time-resolved simultaneous stereoscopic PIV and planar LIF system together with the *Taylor's frozen turbulence hypothesis*. The obtained dataset is then analyzed to understand how density gradients perturb the eigenframe of the rate-of-strain tensor whose alignments with the vorticity vector govern the key turbulence process of vortex-stretching.

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