

Abstract Submitted
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Coherent structures in uniformly sheared turbulence¹ CHRISTINA VANDERWEL, STAVROS TAVOULARIS, University of Ottawa — Uniformly sheared flow with a turbulence Reynolds number Re_λ in the range from 100 to 140 has been generated in a water tunnel and its instantaneous structure has been examined using flow visualization, LDV and PIV. The flow was found to consist of regions with nearly uniform velocity and separated by relatively strong shear layers containing large vortices. The concentration of vortices and the probability distribution functions of their directions of rotation, strengths, sizes and shapes in three characteristic planes of the flow have been determined. These results, as well as high-speed scans of injected dye patterns, show that horseshoe-shaped vortices are prevalent in this flow.

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