

Abstract Submitted
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Velocity measurements in the near wake of a ship superstructure¹

CODY BROWNELL, LUKSA LUZNIK, MURRAY SNYDER, HYUNG SUK KANG, U.S. Naval Academy, COLIN WILKINSON, Zenetex LLC — Velocity measurements in a ship airwake are obtained *in situ* aboard a 108 ft naval training vessel. Three-component sonic anemometers are placed at the bow of the ship, for reference wind measurement, and at numerous locations above a flight deck at the stern of the ship. The mean flow structure resembles that of a 3D backward-facing step, with a recirculation region covering much of the forward flight deck, and significant downwash over the remainder of the surface. Reynolds stresses and two-point velocity correlations are presented, and placed in the context of shipborne helicopter operations. The influence of an atmospheric boundary layer, often unavailable in ship airwake measurements from a wind tunnel, is discussed.

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Cody Brownell
U.S. Naval Academy

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