

Abstract Submitted
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Stroboscopic *in situ* detection of 2D superfluid dynamics in BECs¹ JOSEPH LOWNEY, KALI WILSON, BRIAN P. ANDERSON, University of Arizona — Bose-Einstein condensates (BECs) serve as an attractive medium for the study of quantum turbulence. Of particular interest is the ability of a BEC to sustain quantized vortices and solitons, which are central to our understanding of superfluid dynamics. Further studies of such dynamics would be greatly aided by minimally destructive *in situ* detection of these microscopic density features. We demonstrate, discuss, and compare multiple methods of stroboscopic *in situ* detection of 2D vortex distributions and superfluid wave phenomena in single component rubidium-87 BECs.

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