

Abstract Submitted
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Imaging the 3D structure of vortex cores in Bose-Einstein condensates¹ KALI WILSON, E. CARLO SAMSON, ZACHARY NEWMAN, BRIAN P. ANDERSON, University of Arizona — We describe an absorption imaging technique that enables the determination of the three-dimensional structure of vortex cores in Bose-Einstein condensates. In our procedure, spherical or oblate BECs are created in a magnetic trap, and various excitation techniques can be used to generate vortices in the condensate. The condensate is then released from the trap, and multiple absorption images are taken of the ballistically expanding condensate. These images are stitched together to form a single 3D image. This technique allows for studies of vortex structure and dynamics in experiments where the vortex cores are not aligned with a single imaging axis.

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