

Abstract Submitted
for the DAMOP07 Meeting of
The American Physical Society

Vortex formation during the growth of Bose-Einstein condensates

CHAD WEILER, TYLER NEELY, DAVID SCHERER, BRIAN ANDERSON, College of Optical Sciences, University of Arizona — We experimentally study of the growth of Bose-Einstein condensates in harmonic trapping potentials with laser-induced perturbations to the potential well. We find that some time-independent perturbations can significantly impact the growth process and final state of the BEC. In particular, in numerical simulations and our experiments, we have observed the generation of vortices and vortex-antivortex pairs as a result of creating BECs in perturbed potentials. We will describe the results of our ongoing and completed experiments (D.R. Scherer, C.N. Weiler, T.W. Neely, B.P. Anderson, cond-mat/0610187, to be published in Phys. Rev. Lett.).

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Date submitted: 02 Feb 2007

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