

Abstract Submitted
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Dynamical Instability of a Doubly Quantized Vortex in a Bose-Einstein Condensate YONG-IL SHIN, MICHELE SABA, MIT, MUKUND VEN-GALATTORE, Harvard University, THOMAS PASQUINI, CHRISTIAN SANNER, AARON LEANHARDT, MIT, MARA PRENTISS, Harvard University, DAVID PRITCHARD, WOLFGANG KETTERLE, MIT — Doubly quantized vortices were topologically imprinted in sodium condensates [1], and their time evolution was observed using a tomographical imaging technique. The dynamical instability of a doubly quantized vortex state in a condensate was directly confirmed by observing that a doubly quantized vortex core split into two singly quantized vortex cores [2]. The characteristic time scale of the splitting process was found to be longer at higher atom density. [1] A.E. Leanhardt, et.al., Phys. Rev. Lett. 89, 190403 (2002). [2] Y. Shin, et.al., Phys. Rev. Lett. 93, 160406 (2004).

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