

Abstract Submitted  
for the DAMOP18 Meeting of  
The American Physical Society

**Alice Ring in a Bose-Einstein Condensate**<sup>1</sup> ALINA BLINOVA, Amherst College, TUOMAS OLLIKAINEN, MIKKO MÖTTÖNEN, Aalto University, DAVID HALL, Amherst College — Topological excitations analogous to 't Hooft-Polyakov magnetic monopoles have recently been observed in spinor Bose-Einstein condensates. While the singular point defect is topologically stable, it can undergo a continuous transition to a more energetically favorable but topologically equivalent structure consisting of a half-quantum vortex ring with a ferromagnetic core. This nonsingular excitation is known as an Alice ring. We observe the transition from monopole to Alice ring experimentally in a spin-1 Bose-Einstein condensate in its polar phase, with numerical simulations matching our experimental results. We further characterize the Alice ring and observe its oscillations in the harmonically trapped condensate.

<sup>1</sup>Supported in part by NSF grant PHY-1519174

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Date submitted: 26 Jan 2018

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