

Abstract Submitted
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Isolated Monopoles in a Spinor Bose-Einstein Condensate¹

MICHAEL RAY, Amherst College, EMMI RUOKOKOSKI, KONSTANTIN TUREV, MIKKO MÖTTÖNEN, Aalto University, DAVID HALL, Amherst College — Extending our recent observation of Dirac monopoles in the synthetic magnetic field of a Bose-Einstein condensate [1], we report on studies of isolated monopoles related to the so-called 't Hooft-Polyakov [2,3] monopole. We describe in detail the underlying physical theory of isolated monopole defects, the experimental framework within which they are sought, and corresponding numerical simulations. Recent results will be discussed.

[1] M. W. Ray, E. Ruokokoski, S. Kandel, M. Mottonen, and D. S. Hall, *Nature* 505, 657 (2014).

[2] G. 't Hooft, *Nuclear Physics B* 79, 276 (1974).

[3] A.M. Polyakov, *JETP Lett.* 20, 194 (1974).

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Michael Ray
Amherst College

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