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Isolated Monopoles in a Spinor Bose-Einstein Condensate[1]
MICHAEL RAY, Union College, EMMI RUOKOKOSKI, KONSTANTIN TIUREV, MIKKO MÖTTÖNEN, Aalto University, DAVID HALL, Amherst College — We present an update on our experiments detailing the observation of isolated monopoles in a spinor Bose-Einstein condensate. Unlike the Dirac monopole [1], these point defects exist in the order parameter of the condensate wave function. With no associated line singularities they also represent truly isolated monopoles. We will discuss the underlying theory and present new data confirming the existence of this point defect.

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

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Michael Ray
Union College

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