Isolated Monopoles in a Spinor Bose-Einstein Condensate

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.


This material is based upon work supported by the National Science Foundation under grant no. PHY-1205822.

Michael Ray
Amherst College