## Abstract Submitted for the DAMOP20 Meeting of The American Physical Society

Creation of a Skyrmion in a Biaxial-Nematic Magnetic Phase ALINA BLINOVA, Amherst College, TUOMAS OLLIKAINEN, Aalto University, YIXIN XIAO, Amherst College, MIKKO MÖTTÖNEN, Aalto University, DAVID HALL, Amherst College — Spin-2 Bose-Einstein condensates exhibit several magnetic phases with symmetries different from those of the spin-1 case, extending the variety of possible topological excitations. For example, three-dimensional skyrmions in the spin-2 biaxial nematic (BN) phase involve a topologically nontrivial winding in the order parameter, where the space is described at each point by the orientation of a square . We present evidence for the creation of a three-dimensional BN half-skyrmion using magnetic imprinting techniques, as well as progress towards the experimental realization of a full BN skyrmion

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