

Abstract Submitted
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Local Number Fluctuations Within a Dipolar Bose Einstein Condensate R. BISSET, C. TICKNOR, Los Alamos Natl Lab, D. BAILLIE, P.B. BLAKIE, Jack Dodd Centre for Quantum Technology, Department of Physics, University of Otago, Dunedin, New Zealand — In dipolar Bose-Einstein condensates a range of new physics is expected to arise, including a momentum dependent interaction and a roton-like dispersion relation for certain trap geometries (which is yet to be observed experimentally). We present theoretical results demonstrating that the analysis of number fluctuations within cells of various shapes and sizes is a highly sensitive tool for probing roton modes experimentally.

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