

Abstract Submitted
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BEC Precision Interferometry: Towards a Measurement of the DC Polarizability of ^{87}Rb J.H.T. BURKE, V. LEUNG, R.A. HORNE, R.H. LEONARD, C.A. SACKETT, University of Virginia — We present our efforts to make precision measurements with a Bose-Einstein condensate guided-wave interferometer. In this case, a BEC of ^{87}Rb is positioned between millimeter scale electric field plates such that a differential phase can be applied between two arms of an interferometer. This phase is proportional to the electric polarizability, which we anticipate measuring to an ultimate precision of four decimal places. We will discuss the motivations and apparatus considerations as well as preliminary results.

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