

Abstract Submitted
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An experiment to measure the electric polarizability of ^{87}Rb using a condensate interferometer BENJAMIN DEISSLER, K. JERAMY HUGHES, JOHN H.T. BURKE, CASS SACKETT, University of Virginia — Atom interferometry using Bose-Einstein condensates has developed to a point at which interesting measurements are now feasible. We have demonstrated a condensate interferometer with coherence time over 70 ms and arm separations over $200\mu\text{m}$. This allows each packet to be individually accessible. We plan to use this device to measure the electric polarizability of ^{87}Rb by applying a precise electric field to one packet and not the other. By observing the resulting phase shift, we expect to be able to extract the polarizability with a relative accuracy better than 10^{-3} . We will report on the experimental developments.

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