

Abstract Submitted  
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**Condensate Interferometry in a Magnetic Guide**<sup>1</sup> R.A. HORNE,  
R.H. LEONARD, C.A. SACKETT, University of Virginia — We present recent  
progress on experiments on atom interferometry using Bose-Einstein condensates  
confined in a magnetic guide. Several sources of decoherence can be avoided by using  
a harmonic trap potential to control the motion of the the atoms, and common-mode  
noise sources such as vibrations can be controlled using simultaneous dual interfer-  
ometers in the same trap. Important limitations that remain include anharmonicity  
in the trap potential and residual motion of the condensate in the trap. We will  
also describe a new apparatus featuring a cylindrically symmetric potential that is  
optimized for gyroscopic measurements.

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