

Abstract Submitted  
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**Metastable Bose-Einstein Condensates in a Linear Potential** DEVANG NAIK, MISHKAT BHATTACHARYA, SERGIO MUNIZ, CHANDRA RAMAN, Georgia Institute of Technology — We have created a trapped BEC whose spin orientation is metastable in an external, inhomogeneous magnetic field. This trapping field can in principle be used to coherently control the coupling between spin and spatial wavefunctions. Although subject to Majorana losses, we've noticed lifetimes of a few hundred milliseconds. Atoms held in the trap for this amount of time have frequently displayed ring-shaped time-of-flight distributions, whose origins might be due to quantized vortices or a feature of the Majorana loss dynamics in the quantum regime.

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