

Abstract Submitted
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An Off-Axis Rotating Magneto-Optical Atom Trap JINWEI WU, Interferometrics, Inc, EUN OH, US Naval Research Laboratory/George Washington University, FRANK MOSCATELLI, Swarthmore College, CHARMAINE GILBREATH, US Naval Research Laboratory, YEONJU HAN-OH, George Washington University, SHENGWANG DU, Edward L. Ginzton Laboratory, Stanford University — We present a simple configuration of a magneto-optical trap for cold atoms. The trap is very simple in design, employing only a small permanent magnet and an external Helmholtz bias coil. The trap's principal advantage is that the entire volume of the overlapping laser beams can be used for atom guiding and manipulation. An especially interesting effect is the rotation of the trapped atoms in circular motion as the permanent magnet is rotated. Clouds containing on the order of 2×10^6 atoms are rotated up to 60Hz forming a 5 mm diameter ring. This rotation can potentially be used in studying the behavior of cold atoms in 2-dimensional potential as well as applications for rotational sensors.

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