

Abstract Submitted
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Bichromatic forces for increasing the number of atoms in miniaturized traps¹ JOSHUA GROSSMAN, WILLIAM MALOUF, St. Mary's College of Maryland, SARA DESAVAGE, Aerospace Mass Properties Analysis Incorporated, ADAM HAMMETT, CHARLES ADLER, St. Mary's College of Maryland, FRANK NARDUCCI, Naval Air Systems Command — The number of atoms in a magneto-optical trap (MOT) scales very strongly with the size of the trapping beams. Therefore, atom numbers in miniature atom traps are often small. Bichromatic forces may greatly exceed spontaneous emission forces. These larger forces may be exploited to compensate for the number reduction from miniaturization. To the best of our knowledge to date, the simultaneous application of bichromatic forces in multiple dimensions has not been studied. We present our work on the development of miniature magneto-optical traps using bichromatic laser forces.

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