

Abstract Submitted
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Loading an Rb-87 MOT directly into a variable-period accordion lattice JOHN HUCKANS, Bloomsburg University of Pennsylvania — We report on our progress toward loading an Rb-87 three-dimensional magneto-optical trap (3D MOT) directly into a two-dimensional variable-period optical lattice^{1,2} (2D accordion lattice). Preliminary calculations suggest the feasibility of achieving an approximate 10^2 increase in phase space density by combining gray-molasses-type cooling techniques³ with spatial density compression of a 3D MOT with an accordion lattice.

¹J.H. Huckans, Univ. of Maryland doctoral dissertation (2006).

²L. Fallani *et al.*, *Opt. Express* **13**, 4303-4313 (2005).

³G. Salomon *et al.*, *EPL* **104**, 63002 (2013).

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