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Progress toward creation of a Rb-87 MOT to be loaded directly into a wide-range accordion lattice JOHN HUCKANS, Bloomsburg University of Pennsylvania — We report on our progress toward creation of a Rb-87 three-dimensional magneto-optical trap (3D MOT) to be loaded directly into an optical lattice. Preliminary calculations suggest the feasibility of achieving an approximate 10^2 increase in phase space density by combining standard optical molasses techniques with spatial density compression of a 3D MOT with an accordion lattice.[1,2,3,4]

[1]J.H. Huckans, Univ. of Maryland doctoral dissertation (2006).
[2]L. Fallani et al., Opt. Express 13, 4303-4313 (2005).
[3]T.C. Li et al., Opt. Express 16, 5465-5470 (2008).
[4]R.A. Williams et al., Opt. Express 16, 16977-16983 (2008).

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