

Abstract Submitted
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Progress towards alkaline-earth fermions in a 1D uniform potential BENJAMIN J. RESCHOVSKY, DANIEL S. BARKER, NEAL C. PISENTI, GRETCHEN K. CAMPBELL, JQI, University of Maryland and NIST, College Park, MD, 20742 — We present our progress towards realizing a 1D uniform "box trap" potential for degenerate fermionic alkaline-earth atoms in order to study highly symmetric $SU(N)$ spin models. Our experiment first generates a degenerate gas of ^{87}Sr atoms via evaporation in a crossed dipole trap. Next, we plan to load the atoms into an array of 1D box traps formed by a red-detuned 2D optical lattice and blue-detuned end-caps. The end-caps are generated by direct imaging of a digital micromirror device (DMD), which gives us dynamic control of the potential. We report initial characterization of the blue traps and heating rate measurements.

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