Abstract Submitted
for the DAMOP16 Meeting of
The American Physical Society

A 2D MOT design optimized for dual-species ^{6}Li-^{7}Li experiments
YANPING CAI, JESSE EVANS, KEVIN WRIGHT, Dartmouth — We have built a 2D MOT optimized for simultaneous capture and cooling of ^{6}Li and ^{7}Li. The design includes a vapor source located very close to the capture region, which reduces depletion of the low-velocity part of the oven flux. The source is angled so that the most probable longitudinal velocity of captured atoms is near optimal for transferring to a 3D MOT, even without a push beam. Because ^{6}Li D2 repump light can impede capture and cooling of ^{7}Li, we have characterized the system performance with ^{6}Li repumped on both the D1 and D2 transitions. This design provides ample cold atom flux to load a dual-species 3D MOT for quantum degenerate gas experiments.

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Date submitted: 29 Jan 2016 Electronic form version 1.4