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Photoassociation spectroscopy of heteronuclear LiYb molecules[1]
ALAINA GREEN, RICHARD ROY, RYAN BOWLER, SUBHADEEP GUPTA, University of Washington — We probe the electronically excited potentials of Li*Yb with photoassociation (PA) spectroscopy in a dual-species optical dipole trap. Previous studies of interspecies PA by trap-loss spectroscopy in a double MOT were hindered by strong homonuclear photoassociative loss of Li to states in the excited-state Σ potentials [1]. We null this background by performing PA on a cycling transition in a mixture of spin-polarized ^{6}Li and ^{174}Yb. The Pauli blocking of Li s-wave PA enables the observation of interspecies PA as well as yet unreported Li_2 photoassociation resonances to excited Π states. We intend to utilize knowledge of the interspecies spectrum to perform Raman spectroscopy on the electronic ground state of LiYb, moving towards the coherent production of polar ultracold molecules with a paramagnetic degree of freedom. [1] R. Roy, et al. Phys. Rev. A. 94, 033413 (2016).

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