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Progress towards Direct Photoassociative Formation of Ultracold KRb Molecules in the lowest rovibronic state $X\,^1\Sigma^+, v = 0, N = 0$ JAYITA BANERJEE, DAVID RAHMLOW, RYAN CAROLLO, MICHAEL BELLOS, EDWARD EYLER, PHILLIP GOULD, WILLIAM STWALLEY, Dept. of Physics, University of Connecticut — We report our progress on direct formation of ground-state KRb molecules with v=N=0 using the resonant coupling of the $1\,^1\Pi$ and $2\,^1\Pi$ states just below the lowest excited asymptote ($4s$(K) + $5p_{1/2}$(Rb)) as discussed in [1]. The molecules are formed in a dual species MOT by photoassociation using a cw titanium sapphire laser and then detected by resonance-enhanced multiphoton ionization using a pulsed dye laser. As a first step, we are continuing to assign the photoassociation spectrum reported in [2] using additional information from vibrational-state-selective detection. This research is supported by the National Science Foundation and by the Air Force Office of Scientific Research.

[1] W. C. Stwalley *et al.*, J. Phys. Chem. A **114**, 81 (2010).
[2] D. Wang *et al.*, Eur. Phys. J. D **31**, 165 (2004).

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