

Abstract Submitted
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Forming ultracold LiK molecules from Li-K mixtures SANDIPAN BANERJEE, MARKO GACESA, ROBIN CÔTÉ, Department of Physics, University of Connecticut, Storrs, CT 06269 — We present a theoretical study of scattering properties of ultracold Li + K in an external magnetic field. Based on the isotopes involved, Li-K mixtures can have a fermi-fermi, fermi-bose or bose-bose symmetry. We use the best available molecular potentials adjusted to reproduce recent measurements of Feshbach resonances in a ${}^6\text{Li}$ - ${}^{40}\text{K}$ mixture¹ to accurately predict the positions of Feshbach resonances and other scattering properties in remaining isotopic mixtures. The effect of higher partial waves in those cases is discussed. We suggest a scheme for photoassociative formation of ultracold LiK molecules in their lowest ro-vibrational levels in the molecular ground state.

¹E.Wille et.al. PRL 100, 053201 (2008)

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