

Abstract Submitted
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Ultracold Mixtures of Lithium and Ytterbium¹ ANDERS HANSEN, ALEXANDER KHRAMOV, WILLIAM DOWD, RICHARD ROY, ALAN JAMISON, BENJAMIN PLOTKIN-SWING, SUBHADEEP GUPTA, University of Washington, Seattle WA 98195 — Quantum degenerate mixtures of alkali and alkaline-earth-like atoms introduce a wide range of studies of few- and many-body physics, and provide a path toward paramagnetic, polar molecules. We here report on our production and studies of a novel ultracold-atom system comprised of a mixture of ground-state ${}^6\text{Li}$, and ${}^{174}\text{Yb}$ in the metastable 3P_2 -state. This mixture has the advantage over ground-state Li+Yb of potentially exhibiting wide magnetically tunable interactions, and is predicted to possess a far greater dipole moment. We also discuss recent studies of chemical dynamics near the broad ${}^6\text{Li}$ Feshbach resonance, as modified by a third, non-resonant species, including measurements of reaction rate coefficients and their comparison with theoretical scattering length-dependent scaling laws.

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