

Abstract Submitted
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Collisional studies of an ultracold mixture of lithium and excited state ytterbium atoms¹ WILLIAM DOWD, RICHARD ROY, RAJENDRA SHRESTHA, SUBHADEEP GUPTA, University of Washington — Ultracold mixtures of alkali and alkaline-earth systems are one promising avenue to achieve ultracold paramagnetic ground state molecules. However, alkaline-earth atoms are insensitive to magnetic fields in their ground state, rendering Feshbach molecule creation techniques extraordinarily difficult. By using a long-lived and magnetic excited state of the alkaline-earth, this deficiency may be overcome. We perform collisional studies of alkali lithium and the metastable 3P_2 excited state of alkaline-earth-like ytterbium in the presence of a controllable background magnetic field. We present measurements of the field dependent inter and intra-species inelastic interactions. We assess the potential for a magnetic Feshbach resonance to be used in LiYb dimer creation.

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