Abstract Submitted
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Observation of Magnetic Feshbach Resonances in Ultracold Yb+Li mixtures[1] JUN HUI SEE TOH, ALAINA GREEN, XINXIN TANG, SUBHADEEP GUPTA, University of Washington, HUI LI, MING LI, SVETLANA KOTOCHIGOVA, Temple University — We have observed multiple interspecies magnetic Feshbach resonances in ground state collisions between ^{173}Yb and ^{6}Li atoms. These narrow resonances in this non-bialkali collision system arise from the hyperfine coupling between the ^{173}Yb nucleus and the ^{6}Li valence electron. Each resonance is identified as a resonant loss of atoms from a crossed optical dipole trap with varying magnetic field. The locations of these resonances are in good agreement with theoretical predictions based on prior two-photon photoassociation spectroscopy performed in our group. We will report on our observations of YbLi Feshbach resonances and our plans to apply these resonances towards magnetoassociation of ultracold YbLi molecules in the electronic ground state. The doublet-sigma YbLi molecule possesses both electric and magnetic dipole moments that can be utilized towards quantum simulation and information science, precision measurements and ultracold chemistry.

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None

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