

Abstract Submitted
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Radio-Frequency Spectroscopy of a Mass-Imbalanced Fermi-Fermi Mixture: Measuring Atom-Dimer Interactions¹ MARKO CETINA, MICHAEL JAG, MATTEO ZACCANTI, RIANNE LOUS, IQOQI, Austrian Academy of Sciences, Innsbruck, Austria, JESPER LEVINSEN, Cavendish Laboratory, Cambridge, UK, DMITRY PETROV, LPTMS, CNRS, Universite Paris Sud, Orsay, France, FLORIAN SCHRECK, RUDOLF GRIMM, IQOQI, Austrian Academy of Sciences, Innsbruck, Austria — We use radio-frequency spectroscopy to investigate a mixture of ^{40}K atoms and $^6\text{Li}^{40}\text{K}$ Feshbach molecules on the repulsive side of a ^6Li - ^{40}K Fermi-Fermi interspecies Feshbach resonance. The shifts in the peak positions in our spectra indicate an attractive interaction between the ^{40}K atoms and $^6\text{Li}^{40}\text{K}$ dimers, related to a p -wave atom-dimer scattering resonance. The measured attraction agrees well with a mean field description of the atom-molecule interaction, even in the strongly-interacting regime. Strong tails in our spectra point to the importance of momentum corrections to the wavefunction of the interacting K atoms and provide information about the excited states of our system.

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