Abstract Submitted
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Precise Characterization of Few-body Interactions in ^{39}K[1] XIN XIE, ROMAN CHAPURIN, MICHAEL VAN DE GRAAFF, CARLOS LOPEZ-ABADIA, JARED POPOWSKI, JUN YE, ERIC CORNELL, University of Colorado, Boulder — Dilute ultracold quantum gases provide an ideal platform to study short-range interactions in a controlled way. Bosonic species present rich physics owing to the two-body and three-body interactions. We will report some of the first results taken with our new ^{39}K machine. By doing radio frequency (r.f.) dissociation, we are able to measure the binding energy of Feshbach molecules within an uncertainty of sub-kilohertz. This spectroscopic method not only enables us to locate the pole of the Feshbach resonance with great precision but also assists the detection of small energy shift due to few-body interactions.

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