Abstract Submitted
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Direct observation of ultracold molecular reactions[1] MING-GUANG HU, YU LIU, DAVID GRIMES, ANDREI GHEORGHE, KANG-KUEN NI, Harvard University — Ultracold atoms and molecules provide a new platform to explore chemical reactions at ultralow temperatures. In this regime, reactions could proceed surprisingly efficiently due to their quantum mechanical nature. We are investigating a likely 4-center reaction, 2KRb->K2+Rb2+KE (1.24 meV), in the temperature regime below 1 micro-Kelvin. Towards this goal, we have built an apparatus that combines AMO techniques for ultracold reagent preparation and physical chemistry techniques for reaction product detection through velocity-map imaging (VMI) of ions. I will report our first results on direct observation of ultracold molecular reactions.

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