

Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Observation of Feshbach resonances between ultracold Na and Rb atoms DAJUN WANG, FUDONG WANG, DEZHI XIONG, XIAOKE LI, Department of Physics, The Chinese University of Hong Kong, Hong Kong, China, EBERHARD TIEMANN, Institut für Quantenoptik, Leibniz Universität Hannover, Welfengarten 1, 30167 Hannover, Germany — We have successfully prepared an optically trapped ultracold mixture of ^{23}Na and ^{87}Rb atoms and studied their interspecies Feshbach resonances. Using different spin combinations, 9 s -wave and p -wave resonances are identified by observing the high inelastic losses and temperature increases for both species near resonant fields. The two s -wave resonances below 500 G between atoms in their lowest energy levels are possible candidates for Feshbach molecule association. Our results are well characterized by a coupled channel model and are used to refine the ground state interspecies collision properties between ^{23}Na and ^{87}Rb . This work opens up the prospect for ground-state bosonic NaRb molecules which are chemically stable and can provide strong dipolar interactions.

Dajun Wang
Department of Physics, The Chinese University of Hong Kong,
Hong Kong, China

Date submitted: 24 Jan 2013

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