

Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Toward polar molecules from ultracold mixture of ^{23}Na and ^{87}Rb atoms FUDONG WANG, DEZHI XIONG, XIAOKE LI, DAJUN WANG, Department of Physics, The Chinese University of Hong Kong, Hong Kong, China — The bosonic NaRb molecule has a large electric dipole moment and is stable against two body chemical reactions. It is thus well suited for studying quantum gases with dipolar interactions. We have built a compact experiment setup based on a single UHV chamber to investigate the production of this molecule by association of ultracold atoms. A dual Bose-Einstein condensate of Na and Rb has been realized with evaporative and sympathetic cooling in this setup. Interspecies Feshbach resonances are also observed and well understood. We are currently working on the formation of NaRb Feshbach molecules and the excited-state spectroscopy for producing ground-state polar molecules.

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Date submitted: 24 Jan 2013

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