

Abstract Submitted  
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**Molecule Formation Experiments with Ultracold Gases of  $^{23}\text{Na}$  and  $^6\text{Li}$**  TOUT T. WANG, Department of Physics, Harvard University, MYOUNG-SUN HEO, TIMUR M. RVACHOV, WOLFGANG KETTERLE, DAVID E. PRITCHARD, Research Laboratory for Electronics, Department of Physics, MIT — We will describe progress towards making Feshbach molecules from an ultracold mixture of  $^{23}\text{Na}$  and  $^6\text{Li}$ . Molecule formation attempts were done around a closed-channel dominated Feshbach resonance at 796G, for which significant coupling between open and closed channel states occurs in a region less than 50mG wide. Our experimental configuration includes one part per  $10^5$  magnetic field stability, field ramps shaped to minimize time spent near resonance while maintaining adiabaticity, and an improved optical trapping geometry that gives faster separation of formed molecules from remaining atoms in a magnetic field gradient. We will also discuss the possibility of molecule formation in an optical lattice as well as features of the fermionic  $^{23}\text{Na}^6\text{Li}$  molecule in its ro-vibrational ground state.

Tout T. Wang  
Department of Physics, Harvard University

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