

Abstract Submitted  
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**Towards Dual BEC: Zeeman slower approach.** MATTHEW GIBBS, ANDREW SELTZMAN, EDWARD THIEMANN, TETSUYA ISHIKAWA, GUSTAVO TELLES, CHANDRA RAMAN, Georgia Tech — We present the features of an experimental apparatus, specially built to produce and investigate dual species atomic Bose-Einstein condensates of  $^{23}\text{Na}$  and  $^{87}\text{Rb}$ . The system has many interesting capabilities including a dual oven with a distillation chamber for safe handling, the ability to generate kilogauss magnetic fields, and high optical access. Our approach incorporates a Zeeman slower, capable of delivering a large flux of both Na and Rb atoms to be captured in a dual species magneto-optical trap. Later,  $^{87}\text{Rb}$  atoms are sympathetically cooled by large numbers of  $^{23}\text{Na}$  atoms, evaporatively cooled down to the quantum degeneracy. We are interested in observing quantum statistical effects, interaction tuning, and production of heteronuclear ultracold dimer molecules. Future experiments and ideas may be presented.

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