

Abstract Submitted
for the DAMOP10 Meeting of
The American Physical Society

Adiabatic magnetoassociation of KRb Feshbach molecules¹ RUTH SHEWMON, TYLER CUMBY, JOHN PERREAULT, DEBORAH JIN, JILA, National Institute of Standards and Technology and University of Colorado, and Department of Physics, University of Colorado at Boulder — We study the creation of Fermionic $^{40}\text{K}^{87}\text{Rb}$ Feshbach molecules via magnetoassociation. Two types of behavior can be accessed by varying the magnetic field sweep rate. In the nonadiabatic limit where few molecules are created, pair formation is governed by Landau-Zener physics. This intuitive two-body picture breaks down at the other extreme, where adiabatic molecule creation efficiency saturates below unity. A better understanding of this efficiency is useful for experiments where Feshbach molecules are a first step, such as the creation of ground state polar molecules.

¹We acknowledge funding from NIST and NSF. JDP acknowledges support from a NRC Research Associateship Award at NIST. RS acknowledges support from the DoD NDSEG program.

Ruth Shewmon
JILA, National Institute of Standards and Technology and
University of Colorado, and Department of Physics,
University of Colorado at Boulder

Date submitted: 31 Mar 2010

Electronic form version 1.4