**Final state distribution in three-body recombination of three ultracold $^{87}$Rb atoms** B. RUZIC, Joint Quantum Institute, Y. WANG, APS, J. D'INCAO, JILA, P. JULIENNE, Joint Quantum Institute, J. WOLF, A. KRÜKOW, M. DEISS, University of Ulm, E. TIEMANN, University of Hannover, J. HECKER DENSCHLAG, University of Ulm — We use numerical calculations of coupled 3-body equations to obtain predictions of the distribution of $Rb_2$ dimer vibrational-rotational states when three ultracold Rb atoms undergo 3-body recombination. We assume the three body potentials at long range are given by pairwise addition of the known two-body potentials having the known van der Waals coefficient and scattering length for two Rb atoms and having a number $N$ of s-wave bound states. We solve the 3-body equations in the adiabatic hyperspherical representation to obtain the product distributions as $N$ increases from unity and compare them to recently measured product distributions at the University of Ulm. We find points of agreement as well as difference with the observations, and use these to get insights into the nature of threshold three-body recombination of ultracold Rb atoms.

Paul Julienne
Joint Quantum Institute

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