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Three-Body Recombination in One-Dimensional Systems NIRAV MEHTA, JILA, CHRIS GREENE, JILA/Univ. of Colorado, BRETT ESRY, Kansas State University — Few-body processes in one dimension are of critical importance in the understanding of quantum gases in highly confined trap geometries. We consider three- particle systems for a variety of 2-body interactions using the adiabatic hyperspherical formalism. In particular, we numerically demonstrate that the threebody recombination probability vanishes for zero- range interactions, verifying an old result found by McGuire (1964). We further consider the recombination probability for a variety of finite range interactions and study the dependence on the one- dimensional scattering length. Finally, we present some preliminary results for four-body systems.

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