

Abstract Submitted  
for the DAMOP14 Meeting of  
The American Physical Society

**Universal three-body physics in two dimensions and quasi-two dimensions** JOSE P. D'INCAO, JILA, University of Colorado and Department of Physics, Kansas State University, BRETT D. ESRY, Department of Physics, Kansas State University — In this work we explore the three-body problem in two and quasi-two dimensions using the adiabatic hyperspherical representation. We developed the formalism in terms of the hyperangular democratic coordinates and determine several symmetry properties and boundary conditions. We explore the existence of purely two dimensional (2D) three-body bound states and their connections with the quasi-two dimensional case (Q2D). We also explore three-body confinement-induced resonances as well as the physics related to three-dimensional Efimov physics when transitioning to a Q2D geometry, illustrating experimental signatures of such effect relevant for Q2D ultracold quantum gases with strong interactions. Supported by AFOSR-MURI.

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Date submitted: 31 Jan 2014

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