Abstract Submitted
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The four body problem[1] SETH T. RITTENHOUSE, Department of Physics and JILA, University of Colorado, Boulder, CO 80309, NIRAV P. MEHTA, J.P. D'INCAO, JILA, University of Colorado, Boulder, CO 80309, CHRIS H. GREENE, Department of Physics and JILA, University of Colorado, Boulder, CO 80309 — Using democratic, body fixed hyperspherical coordinates, the four fermion problem can be reduced to a set of five dimensional integrals over a physically motivated variational basis. This method accurately produces the low-lying adiabatic hyperspherical potential curves. The details of our method are presented and then used to calculate various observables relevant to current experiments in the ultracold BEC-BCS crossover regime.

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