

Abstract Submitted  
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**Hyperspherical explicitly correlated Gaussian approach for four-body systems with finite angular momentum**<sup>1</sup> D. RAKSHIT, D. BLUME, Washington State University — It has been predicted that four-body systems with angular momentum  $L = 1$  and parity  $\pi = +1$  exhibit four-body resonances [1,2] and Efimov physics [3]. To treat these phenomena in the hyperspherical framework, we extend the work of von Stecher and Greene [4] to finite angular momenta. In particular, we employ explicitly correlated Gaussian basis functions with global vectors to solve the hyperangular Schrödinger equation for four-body systems with  $L^\pi = 1^+$  and  $1^-$  symmetry. We apply the approach to four-fermion systems with unequal masses.

[1] K. M. Daily and D. Blume, Phys. Rev. Lett. 105, 170403 (2010).

[2] S. Gandolfi and J. Carlson, arXiv: 1006.5186v1.

[3] Y. Castin, C. Mora and L. Pricoupenko, Phys. Rev. Lett. 105, 223201 (2010).

[4] J. von Stecher and C. H. Greene, Phys. Rev. A. 80, 022504 (2009).

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