

Abstract Submitted
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Maxima of many body wave functions as a way to classify and visualize correlated physics¹ WILLIAM WHEELER, LUCAS K. WAGNER, University of Illinois at Urbana-Champaign — Correlated wave functions are difficult to visualize because of their high dimensionality. Often the effects of correlation are not strongly reflected in one particle quantities like the electron density. Inspired by recent work by Luechow [1], we investigate whether the local maxima of wave functions can offer insight into correlated physics. We find that even for bulk systems, the behavior of the maxima is relatively simple and offers an intuitive picture of the role of correlation in these wave functions. We also find that the local energy is a useful quantity to use to find clusters of local maxima. These clusters allow us to classify the maxima and further understand the wave function. [1] Luechow, J. Comput. Chem. 35, 854 (2014).

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