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Finite Size Scaling with Gaussian Basis Sets SABRE KAIS, WINTON MOY, Purdue University, PABLO SERRA, Cordoaba University — We have developed the finite size scaling method, which is based on taking the number of elements in a complete basis set as the size of the system,to calculate the critical parameters for a given quantum system using Gaussian basis sets. We studied the Yukawa potential and Helium-like systems by expanding the system with a Gaussian basis. The finite size scaling approach was then used with the ab initio methods to find the critical parameters of atomic and molecular systems.

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