

Abstract Submitted  
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**Efficient Variational Method for Approximating Ground States of 1D Systems** SANGWOO CHUNG, KUEI SUN, C.J. BOLECH, University of Cincinnati — The matrix product states ansatz, which has been successful in approximating one-dimensional quantum lattice systems by variational methods, has recently been extended to be able to describe gas and liquid systems in the continuum. We demonstrate that this extension, known as the continuous matrix product state, can accurately describe ground state properties of interacting Bosonic and Fermionic gas systems.

Sangwoo Chung  
University of Cincinnati

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