Abstract Submitted
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Variational reduced-rensity-matrix theory applied to the hubbard model JEFF HAMMOND, DAVID MAZZIOTTI, University of Chicago — The application of variational reduced-density-matrix theory to the Hubbard model will be described. Recent results [Physical Review A 73, 062505 (2006)] demonstrate that computationally efficient N-representability conditions produce accurate ground-state energies and reduced-density-matrices for a wide range of interaction strengths for the one-dimensional lattice. I will discuss various types of N-representability conditions, the relationship between symmetries and reduced-density-matrices, and application of this method to other strongly correlated models. Preliminary results for the two-dimensional Hubbard model will be presented.

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