

Abstract Submitted
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A light-front coupled cluster method for quantum field theories¹

JOHN HILLER, SOPHIA CHABYSHEVA, University of Minnesota-Duluth — We describe a new method for the nonperturbative solution of quantum field theories. The exponential-operator technique of the traditional, many-body coupled-cluster method is adapted to the Fock-space eigenvalue problem for the light-front Hamiltonian. This leads to an effective eigenvalue problem in the valence Fock sector and a set of nonlinear integral equations for the functions that define the exponential operator. The approach avoids at least some of the difficulties associated with the Fock-space truncation usually used.

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