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The Non-Perturbative Scalar Yukawa Theory on the Light Front YANG LI, Iowa State University, VLADIMIR KARMANOV, Lebedev Physical Institute, PIETER MARIS, JAMES VARY, Iowa State University — We present a non-perturbative calculation of the scalar Yukawa model in light-front dynamics with a Fock sector dependent renormalization. The Fock space is truncated to four particles and then the *ab initio* Hamiltonian approach is applied. We compute the electromagnetic form factor and compare it with the results obtained from the lower Fock sector truncations. We find that the one- and two-body contributions dominate the Fock space even in the non-perturbative region. However, the four-body contribution exceeds the three-body one as the coupling constant increases. Nevertheless, the form factor shows a good converge as the number of constituent bosons increases.

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