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True muonium on the light front

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The true muonium ($\mu^+\mu^-$) bound state presents an interesting test of light-cone quantization techniques. In addition to the standard problems of solving these non-perturbative calculations, true muonium requires correct treatment of e^+e^- Fock state contributions. Having previously produced a crude model of true muonium using the method of iterated resolvents [1], current work has focused on the inclusion of the box diagrams that should improve the cutoff dependent issues of the model. Further, a parallel computer code allowing for decreased numerical uncertainties is in development. This talk will focus on the current state of these efforts to develop a model of true muonium testable at near-term experiments.

[1] H. Lamm and R.F. Lebed, "True Muonium ($\mu^+\mu^-$) on the Light Front," J. Phys. G 41 125003 (2014).

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