

Abstract Submitted  
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**QED in strong external fields**<sup>1</sup> HELI HONKANEN, PIETER MARIS, JAMES VARY, Iowa State University, STAN BRODSKY, SLAC — Recent interest in strong field QED at RHIC has brought new emphasis on the need for robust methods for solving physical systems with two or more distinct scales. We employ Hamiltonian light-front quantum field theory in a basis function approach to solve the non-perturbative problem of an electron in a strong scalar transverse confining potential - an example that is useful for testing other approaches to field theory at strong coupling. We evaluate both the invariant mass spectra and the anomalous magnetic moment of the lowest state to provide results for this complicated two-scale system. The weak external field limit of the anomalous magnetic moment agrees with the result of QED perturbation theory within the anticipated accuracy.

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Heli Honkanen  
Iowa State University

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