

Abstract Submitted
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Many-spin couplings in electron spin quantum computers RYAN WOODWORTH, ARI MIZEL, Penn State University, DANIEL LIDAR, University of Toronto — We study the effective Hamiltonian governing the evolution of electron spins in coupled quantum dots. Modeling the dot confining potentials with successively more realistic forms, we predict that four-body interactions can be significant in real dots in physically relevant parameter regimes. We discuss the significance of these results for quantum computing.

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