Abstract Submitted
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Spin-cavity longitudinal coupling for two-qubit gates and measurement RUSKO RUSKOV, CHARLES TAHAN, Laboratory for Physical Sciences, College Park, MD 20740 — We have studied the possibility of longitudinal coupling of various encoded quantum dot spin-qubits to a microwave resonator via modulation of voltage gates. A dynamical coupling of tens of MHz can be achieved. We investigate specific procedures for entangling gates using accumulated geometrics phases and calculate possible gate times and fidelities. Implications for qubit readout and continuous quantum monitoring are also considered.

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