

Abstract Submitted
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An Ensemble of NV-centers in Diamond Coupled to a Flux Qubit DAVID MARCOS, Consejo Superior de Investigaciones Cientificas, MARTIJN WUBS, Niels Bohr Institute, R. AGUADO, Consejo Superior de Investigaciones Cientificas, M.D. LUKIN, ANDERS SORENSEN, Niels Bohr Institute — In the last years, the interface between quantum optics and solid state physics has been explored, and various models for hybrid qubits have been proposed. We consider a superconducting flux qubit coupled to an ensemble of NV-centers in diamond. An effective model is derived, showing how coherent transfer between both two level systems can be achieved, and the possible advantages of the system as the building block of a quantum computer.

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