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Optimized Electron-spin-cavity coupling in a double quantum dot¹ XUEDONG HU, University at Buffalo, SUNY, YU-XI LIU, Tsinghua University, China, FRANCO NORI, RIKEN, Japan — We search for the optimal regime to couple an electron spin in a semiconductor double quantum dot to a superconducting stripline resonator via the electrically driven spin resonance technique. In particular, we calculate the spin relaxation rate in the regime when spin-photon coupling is strong, so that we can identify system parameters that allow the electron spin to reach the strong coupling limit.

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