

Abstract Submitted  
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**Spin-orbit induced two-electron spin relaxation in double quantum dots**<sup>1</sup> MASSOUD BORHANI, XUEDONG HU, SUNY at Buffalo, NY — We study the spin decay of two electrons confined in a double quantum dots via the spin-orbit interaction and acoustic phonons. We have obtained a generic form for the spin Hamiltonian for two electrons confined in (elliptic) harmonic potentials in double dots and in the presence of an arbitrary applied magnetic field. Our focus is on the interdot bias regime where singlet-triplet splitting is small, in contrast to the spin-blockade regime. Our results clarify the spin-orbit mediated two-spin relaxation in lateral/nanowire quantum dots, particularly when the confining potentials are different in each dot.

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