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Long spin coherence in a strong spin-orbit qubit

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We measure long spin coherence and strong spin-orbit coupling in Ge/Si nanowire quantum dots. Spin coherence is measured by examining the dephasing of singlet-correlated spins separated between two quantum dots, with each quantum dot occupied by several holes. Spin-orbit coupling is measured by examining the statistical properties of Coulomb blockade peak heights. The measured spin dephasing and spin-orbit coupling suggest that a spin-orbit qubit formed in a Ge/Si nanowire may have an unprecedentedly high manipulation fidelity.