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Mapping out spin blockade in the presence of strong spin-orbit and hyperfine interactions STEVAN NADJ-PERGE, S.M. FROLOV, J. DANON, YU. V. NAZAROV, TU Delft, R. ALGRA, E.P.A.M. BAKKERS, Philips Research Laboratories, L.P. KOUWENHOVEN, TU Delft — Mixing of singlet and triplet states is investigated in the few electron double quantum dot defined in an InAs nanowire. Regular spin filling of the first four electrons in both quantum dots is confirmed by the Pauli spin blockade. For given magnetic field and detuning spin blockade can be suppressed or restored by changing the tunnel coupling. Contributions of spin orbit and hyperfine interactions are revealed by comparing the magnetic field and detuning dependences of the leakage current with the rate equation model.

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