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**Dynamic Nuclear Polarization in InAs Nanowire Few Electron Double Quantum Dots** S.M. FROLOV, S. NADJ-PERGE, J. DANON, YU. V. NAZAROV, TU Delft, R. ALGRA, E.P.A.M. BAKKERS, Philips Research Laboratories, L.P. KOUWENHOVEN, TU Delft — Electrical transport measurements are performed in few electron double quantum dots defined by local gates in InAs nanowires. In the Pauli spin blockade regime the current through the double dot exhibits hysteresis in detuning and magnetic field. The abrupt switching between the low and the high current states is interpreted as polarization and depolarization of nuclear spins in the nanowire due to spin flips of electrons. The effective nuclear magnetic field is in the direction opposite to the applied magnetic field. The hysteresis can be extended to magnetic fields of several Tesla, suggesting a large degree of nuclear polarization.

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