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Transport through double quantum dots in Ge/Si core/shell nanowires AZARIN ZARASSI, ZHAOEN SU, DHARMRAJ K. PATIL, SERGEY M. FROLOV, University of Pittsburgh, MOIRA HOCEVAR, Institute Neel CNRS, MINH NGUYEN, JINKYOUNG YOO, Los Alamos National Lab, SHADI A. DAYEH, Univeristy of California San Diego — In the studies of spin qubits long dephasing times are crucial. Qubits made of materials with low abundance of nuclear spin, group IV semiconductors, have shown long spin coherence times. On top of this, the predicted strong spin-orbit interaction in the valence band of Ge/Si makes it a good platform to electrically manipulate spin states. We have formed stable and tunable double quantum dot by confining holes with the help of bottom gate electrodes in Ge/Si core/shell nanowires. Hole transport through the dots exhibits excited hole states from Zeeman splitting of which g-factors can be extracted. We are searching for spin blockade in the transport between double dots, which can be used to readout spin qubits and study spin-orbit interaction.

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