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Quasiballistic hole transport in Ge/Si core/shell nanowires DHARMRAJ KOTEKAR PATIL, ZHAOEN SU, BINBIN TIAN, Univ of Pittsburgh, MINH NGUYEN, JINKYOUNG YOO, SHADI DAYEH, Centre for Integrated Nanotechnologies, Los Alamos National Laboratory, Los Alamos 87545, USA, SERGEY FROLOV, Univ of Pittsburgh — We investigate low temperature hole transport in Ge/Si core/shell nanowires. We study devices with annealed (Ni) and unannealed (Ti/Al) contacts. We observe Coulomb blockade and analyze the capacitive and quantum energy scales in Ge/Si nanowire quantum dots. In devices with Ni contacts, we study diameter and shell thickness dependence on hole mobility at low temperature. We observe Fabry-Perot oscillations indicating a quasi-ballistic transport regime. We also investigate subband-resolved transport of holes as a function of magnetic field magnitude and orientation.

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