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**Electron transport studies of superconducting Pb single-electron tunneling transistors** KANG LUO, DONG-HUN CHAE, ZHEN YAO, Department of Physics, The University of Texas at Austin, Austin, TX 78712 — We investigate the electronic transport properties of superconducting Pb single-electron tunneling transistors created by electromigration of Pb nanowires. In the superconducting state, the conductance is suppressed due to the Coulomb blockade effect and the absence of density of states in the superconducting gap. Within the region of suppressed conductance, fine structures are observed which can be attributed to quasiparticle tunneling processes involving singularity matching. These features exhibit strong odd-even parity effect at 2 K and become smeared out at 4.2 K. Our preliminary results of single-molecule transistors using superconducting Pb electrodes will also be presented.

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