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Probing the local environment of a superconductor-proximitized nanowire using single electron transistors FEI PEI, MAJA CASSIDY, Delft University of Technology, SEBASTIEN PLISSARD, DIANA CAR, ERIK BAKKERS, Eindhoven University of Technology, LEO KOUWENHOVEN, Delft University of Technology — Majorana bound states are predicted to arise in semiconducting nanowires with strong spin-orbit coupling that are proximity-coupled to a s-wave superconductor and exposed to a magnetic field. Recent tunneling spectroscopy experiments have shown signatures of Majorana bound states through the existence of a peak in conductance that remains fixed to zero bias over a wide range in magnetic fields. Observation of the delocalized nature of these states remains an outstanding challenge. Here we present measurements of a InSb nanowire proximitized by a central superconducting contact. Normal metal leads allow tunneling spectroscopy from each end of the wire, while nearby single electron transistors provide simultaneous information on the local environment both within the proximitized wire and at each end.

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