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Superconducting gap closing and Zero-bias peak in InSb nanowire PENG YU, JUN CHEN, Department of Physics and Astronomy, University of Pittsburgh, MORA HOCEVAR, CEA, Grenoble, France, SBASTIEN PLISSARD, DI-ANA CAR, ERIK BAKKERS, Eindhoven University of Technology, The Netherlands, SERGEY FROLOV, Department of Physics and Astronomy, University of Pittsburgh — In a 1D superconductor-nanowire-normal contact system, Majorana bound states are expected to appear after topological phase transition. Although there are many experiments reported possible zero-bias conductance peak from Majorana bound states, mapping out of the topological phase diagram is still missing. In our InSb nanowire hybrid devices, we observed possible superconducting gap closing and re-opening with magnetic field. These gap closings appear near conductance resonances which show some feature of 1D subband edges. Interestingly, zero-bias conductance peak appears inside the split regime of crossings at finite magnetic field. The magnetic field onset of the zero-bias peak can be tuned by gates underneath the superconductor, which may result from the changing of chemical potential.

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