Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Zero-bias peak splitting in InSb nanowires JUN CHEN, PENG YU, University of Pittsburgh, Pittsburgh, PA, 15260, USA, MOÏRA HOCEVAR, Institut Néel CNRS, Grenoble, France, SÉBASTIEN PLISSARD, CNRS, LAAS, Toulouse, France, DIANA CAR, ERIK BAKKERS, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands, SERGEY FROLOV, University of Pittsburgh, Pittsburgh, PA, 15260, USA — Zero-bias conductance peak(ZBP) has been reported as a signature of Majorana fermions in InSb nanowires. Other features like ZBP phase diagram in chemical potential vs magnetic field and peak splitting are proposed as additional evidences of Majorana fermions. We make superconductor-InSb nanowire hybrid devices with the aim of exploring these features and beyond. By means of high-k HfOx as the dielectric layer, we obtain large gate-tunability of chemical potential, which may enable us to map out ZBP phase diagram. Here we report observation of ZBP at finite magnetic field. Such peak is tunable with gates underneath the superconductor. In particular, it splits and merges again as a function of the center gate. We study such splitting in the context of a pair of coupled Majorana bound states.

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Date submitted: 14 Nov 2014 Electronic form version 1.4