

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Zero-bias peak in InSb nanowires PENG YU, JUN CHEN, Department of Physics and Astronomy, University of Pittsburgh, Pittsburgh, PA, 15260, USA, MOÏRA HOCEVAR, Institut Néel CNRS, Grenoble, France, SÉBASTIEN PLISSARD, CNRS, LAAS, Toulouse, France, DIANA CAR, ERIK BAKKERS, Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands, SERGEY FROLOV, Department of Physics and Astronomy, University of Pittsburgh, Pittsburgh, PA, 15260, USA — Zero-bias conductance peaks(ZBP) in InSb nanowires has been reported as a strong signature of Majorana bound states in semiconductors. We made similar superconductor-InSb nanowire-normal contact hybrid devices with NbTiN on bottom gates and found some features that may corresponding to Majorana bound states. By setting a barrier and tuning gates under the nanowire that are in proximity of superconductors, ZBPs appear at finite magnetic field and usually persist for several hundred miliTesla. In different devices, ZBPs appear at different magnetic field, which may result from different chemical potentials. To achieve a so-called hard induced gap and cleaner devices, we are trying various contact materials and etching methods.

Peng Yu
Department of Physics and Astronomy, University of Pittsburgh,
Pittsburgh, PA, 15260, USA

Date submitted: 14 Nov 2014

Electronic form version 1.4