Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Zero bias conductance peak on the surface of topological semimetal Sb.[1] PENGCHENG CHEN, Department of Physics, Harvard University; Department of Physics Astronomy, University of British Columbia, YANG HE, Department of Physics, Harvard University, YAU CHUEN YAM, Department of Physics, Harvard University; Department of Physics Astronomy, University of British Columbia, SHIANG FANG, Department of Physics, Harvard University, MARCEL FRANZ, Department of Physics Astronomy,University of British Columbia, MOHAMMAD HAMIDIAN, Department of Physics, Harvard University; Department of Physics Astronomy, University of British Columbia; LASSP, Department of Physics, Cornell U, JENNIFER HOFFMAN, Department of Physics, Harvard University; Department of Physics Astronomy, University of British Columbia, HOFFMAN'S LAB TEAM, MARCEL FRANZ COLLABORATION, SHIANG FANG COLLABORATION — Topological materials host protected surface states with locked spin and momentum degrees of freedom that have been predicted to give rise to several exotic excitations such as Majorana fermions and magnetic monopoles. The topological semimetal antimony (Sb) offers a pristine platform in which to search for these excitations. Sb has a bilayer crystal structure; here we obtained both inter-bilayer cleaved and intra-bilayer cleaved terminations. Using scanning tunneling spectroscopy techniques, we observed a robust zero bias conductance peak on the rarer intra-bilayer cleaved surface.

[1]Acknowledge funding from the National Science Foundation DMR-1410480

Pengcheng Chen
Department of Physics, Harvard University; Department of Physics
Astronomy, University of British Columbia

Date submitted: 05 Nov 2015 Electronic form version 1.4