Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Kitaev model with quantum dot chains II: zero bias peaks HAO
WU, ZHAOEN SU, University of Pittsburgh, MORA HOCEVAR, Universite Greno-
ble Alpes; CNRS, Institut Neel, DIANA CAR, Eindhoven University of Technology,
SEBASTIEN PLISSARD, LAAS CNRS, Universite de Toulouse, ERIK BAKKERS,
Eindhoven University of Technology; Delft University of Technology, SERGEY
FROLOV, University of Pittsburgh — We have implemented a triple dot chain
in an InSb nanowire, with each dot strongly coupled to a separate superconducting
NbTiN lead thus defining a three-terminal device. We use magnetic fields which are
parallel to the nanowire axis to study the field dependence of the Andreev bound
state resonances in electrical transport measurements. We observe zero bias peaks
that appear at finite fields, as well as split peaks. By passing currents between
different pairs of electrodes, we identify which dots in the chains host the observed
resonances. We explore the resonances in the context of Majorana bound states, as
well as considering supercurrents and trivial Andreev bound states.

Hao Wu
University of Pittsburgh

Date submitted: 11 Nov 2016   Electronic form version 1.4