

Abstract Submitted
for the TSF19 Meeting of
The American Physical Society

Induced superconducting state in multilayer WTe_2 by proximity effect XURUI ZHANG, XIAOYAN SHI, University of Texas at Dallas — Superconductivity in topological materials has attracted a great deal of interest as an effective way to realize Majorana modes in condensed matter physics. It has been predicted that the proximity effect between an s-wave superconductor and the surface states of a strong topological insulator (TI) could result in a two-dimensional (2D) state which supports Majorana bound states. We fabricated superconductor (Ta)- WTe_2 -superconductor (Ta) junction devices based on WTe_2 with two different thickness. Here we report the observations of the proximity effect induced superconducting states revealed by magnetoresistance (MR) and I-V measurements in both devices. Distinct zero-bias conductance peaks in differential conductance measurements, might be as a sign of Majorana state, were also observed. In addition, the multi-peaks of differential resistance at low temperature and magnetic field marks an interesting superconducting gap structure.

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Date submitted: 01 Oct 2019

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