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Scanning tunneling microscopic investigation of the topological surface of a Weyl semimetal[1] HAO ZHENG, deparement of Physics, Princeton University — Weyl semimetals are believed to open the next era of condensed matter physics after graphene and topological insulators because they provide the first ever realization of Weyl fermions in all physics and extend the classification of topological phases beyond insulators. For many years, experimental studies have been held back due to the absence of material realization of the Weyl semimetal state. Very recently, the first Weyl semimetal has been experimentally discovered in TaAs class of materials. So far only preliminary ARPES and transport experiments have been reported. In this talk, we will present some interesting results of the scanning tunneling microscopy/spectroscopy (STM/STS) study on a Weyl semimetal.

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