

Abstract Submitted  
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**Scanning tunneling microscopy study on new layered superconductor Ta<sub>4</sub>Pd<sub>3</sub>Te<sub>16</sub> single crystal** TONG ZHANG, QIN FAN, WENHAO ZHANG, XI LIU, YAJUN YAN, MINGQIANG REN, MIAO XIA, State Key Laboratory of Surface Physics, Department of Physics, and Advanced Materials Laboratory, Fudan University, Shanghai 200433, China, WENHE JIAO, GUANGHAN CAO, Department of Physics, Zhejiang University, Hangzhou 310027, China, BINPING XIE, DONGLAI FENG, State Key Laboratory of Surface Physics, Department of Physics, and Advanced Materials Laboratory, Fudan University, Shanghai 200433, China — Ta<sub>4</sub>Pd<sub>3</sub>Te<sub>16</sub> is a newly discovered layered superconductor with quasi one dimensional crystal structure. Recent measurements show that it may host unconventional superconductivity. Here we report low-temperature scanning tunneling microscopy/spectroscopy study on this single crystal. Chains like atomic structure on cleaved (-103) surface is observed. There exists CDW like modulations with commensurate periods. The tunneling conductance shows an s-wave like superconducting gap. Vortex lattice is observed in magnetic field, but single vortex core is much larger than expected from bulk H<sub>c2</sub>. The superconductivity gap is rapidly suppressed by applied field. Our observations can be well understood by multi-band superconductivity.

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