Abstract Submitted
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Anisotropic superconducting properties of nanowires at the $LaAlO_3/SrTiO_3$ (110) interface[1] MENGCHEN HUANG, ANIL ANNADI, Univ of Pittsburgh, KALON GOPINADHAN, THIRUMALAI VENKATESAN, ARIANDO ARIANDO, National University of Singapore, GUANGLEI CHENG, PATRICK IRVIN, JEREMY LEVY, Univ of Pittsburgh — Quasi-1D nanowires are created using conductive AFM (c-AFM) lithography[2] at the $LaAlO_3/SrTiO_3$ (110) interface along the (001) and $(1\bar{1}0)$ crystallographic directions. The superconducting properties of nanowires were investigated under transport measurements with respect to the crystallography and orbital hierarchy. We observe anisotropic superconductivity where the upper critical magnetic field along the (001) and $(1\bar{1}0)$ directions are markedly different with a superconducting dome that is shifted for the two orientations as a function of gate voltages. The superconducting dome shift can be explained by anisotropic band structures along the two different directions combined with the Lifshitz transition[3].

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