Abstract Submitted
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Boundary Effects in Superconducting Zn Nanowires[1] STEPHEN SNYDER, YU CHEN, ALLEN GOLDMAN, University of Minnesota — We have studied Zn nanowires connected to Zn electrodes while an applied magnetic field drives the electrodes into the normal state. A finite resistance jump appears at the critical field of the electrodes. The current dependence of this resistance exhibits contrasting differences from its temperature dependence in the low current limit, and this discrepancy builds with shorter wires. The observations may unveil an unconventional breakdown of superconductivity due to the nonequilibrium quasiparticle distribution.

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