

Abstract Submitted  
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**Superconductor to Quantum Metal Transitions in Ultra Thin Films**<sup>1</sup> YEN-HSIANG LIN, ALLEN M. GOLDMAN, University of Minnesota — Homogeneous films of amorphous bismuth have been continuously tuned from the superconducting state by increasing a perpendicular magnetic field. Electrical transport and Hall measurements show that the non-superconducting states of the films are quantum-corrected metals. In the vicinity of transition field, the resistance can be fit by an Arrhenius type of conduction at high temperatures but this form fails at lower temperatures where the resistance is a non-monotonic function of temperature. This suggests that a two-phase regime develops near criticality. Theories suggest that this is in the form of superconducting puddles embedded in a normal matrix<sup>1,2</sup>. <sup>1</sup>B. Spivak, P. Oretto, and S. A. Kivelson, *Phys. Rev. B* **77**, 214523 (2008) <sup>2</sup>Y. Dubi, Y. Meir, and Y. Avishai, *Nature* **449**, 876-880 (2007)

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