

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Magnetoresistance Peak in Quench Deposited Ultra-Thin Amorphous Bismuth Films¹ YEN-HSIANG LIN, ALLEN GOLDMAN, School of Physics and Astronomy, University of Minnesota, SCHOOL OF PHYSICS AND ASTRONOMY, UNIVERSITY OF MINNESOTA TEAM — A magnetoresistance peak in perpendicular magnetic field has been found on the insulating side of the thickness-tuned superconductor-insulator (SI) transition of quench-deposited amorphous bismuth films. The presence of a peak suggests the presence of local superconductivity in these insulating films. Arrhenius type conduction and non-linear I-V characteristics are also observed in the peak regime. The magnitude of this magnetoresistance peak increases substantially with decreasing temperature and with increasing film thickness. The dependence of the peak magnetic field on temperature and thickness may help to explain the underlying mechanism of the magnetoresistance peak.

¹This work is supported in part by the National Science Foundation under grant NSF/DMR-0854742.

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Date submitted: 19 Nov 2010

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