

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Magnetic nanorod - superconductor hybrid near the superconducting transition temperature K. KIM, I. LYUKSYUTOV, D.G. NAUGLE, Department of Physics, Texas A&M University, College Station, TX77843, USA — We report measurements of the magnetoresistance and phase diagram of a lead-bismuth (82% Pb and 18% Bi) superconducting film with an embedded square array of Ni nanorods near the superconducting transition temperature. Magnetoresistance above T_c demonstrates oscillations compatible with flux quantization through the unit cell of the magnetic nanorod array. Strong hysteresis of the superconducting properties and an apparent increase of the second critical field is found.

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Date submitted: 17 Dec 2010

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