

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

London **penetration**
depth in fully deuterated κ -(ET)₂Cu[N(CN)₂]Br¹ T.A. OLHEISER, R.W. GIANNETTA, D.D. LAWRIE, Loomis Laboratory of Physics, University of Illinois at Urbana-Champaign, Urbana, IL 61801, R. PROZOROV, Ames Laboratory of Physics and Department of Physics and Astronomy, Iowa State University, Ames, Iowa 50011, J.A. SCHLUETER, A.M. KINI, U. GEISER, Materials Science Division, Argonne National Laboratory, Argonne, IL 60439 — We report measurements of the London penetration depth, λ , for different magnetic field and crystal orientations in fully deuterated κ (ET)₂Cu[N(CN)₂]Br, an organic superconductor with $T_C = 11.9$ K. λ increases dramatically with deuteration and develops a strong magnetic field dependence. The superfluid density exhibits a power law temperature dependence indicative of a nodal order parameter. We discuss possible connections to nanoscale antiferromagnetic domains.

¹Work at UIUC supported by NSF DMR 05-03882. Work at Argonne National Lab supported by DOE contract # W-31-109-ENG-38.

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Date submitted: 11 Jan 2006

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