Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Resistive Losses in Single-Crystal $\mathbf{Ba_{0.6}K_{0.4}Fe_2As_2}$ BRENDAN BENAPFL, University of Notre Dame, CHENGLIN ZHANG, PENGCHENG DAI, University of Tennessee, Knoxville, H.A. BLACKSTEAD, University of Notre Dame —
Temperature- and field-dependent surface resistance measurements were conducted using Electron Spin Resonance (ESR) techniques on single-crystal $Ba_{0.6}K_{0.4}Fe_2As_2$ samples (rf frequency = 20.3 GHz). At a fixed temperature, field scans were performed at various angles of H_0 with respect to H_{rf}. To our knowledge, this is the first report of such studies on this material. For temperatures exceeding T_C, there was no evidence of iron ESR. In the superconducting state, the samples exhibit dissipative losses which increase monotonically as a function of applied field for fixed temperature. The level of field-dependent dissipation increases as T approaches T_C from below, and vanishes at the transition.

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Date submitted: 19 Nov 2012 Electronic form version 1.4