

Abstract Submitted
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Unusual Temperature and Field Dependence of Electrical Resistivity of $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$ YING YANG, RONGYING JIN, Louisiana State University, A.S. SEFAT, M.A. MCGUIRE, B.C. SALES, D. MANDRUS, Oak Ridge National Laboratory — The in-plane electrical resistivity (ρ_{ab}) of $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$ single crystals with $x=0.02$ and 0.20 was measured as a function of temperature (2 - 400 K) and magnetic field (up to 14 Tesla). At the under-doped end ($x = 0.02$) of the superconductivity dome, we observe positive transverse ($\mathbf{H} \perp ab$) magnetoresistance (MR) that varies linearly with H , and T^2 dependence of ρ_{ab} below and above the structure transition temperature. Surprisingly, the negative MR and $T^{1.5}$ dependence of ρ_{ab} were found for the over-doped end member ($x=0.2$). The underlying physics of such unusual temperature and field dependence of ρ_{ab} will be discussed.

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