

Abstract Submitted
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Doping evolution of the anisotropic upper critical field in $(\text{Ba}_{1-x}\text{K}_x)\text{Fe}_2\text{As}_2$ ¹ MAKARIY TANATAR, YONG LIU, T.A. LOGRASSO, RUSLAN PROZOROV, Ames Laboratory USDOE, Ames, IA 50011, JAN J. JAROSZYNSKI, J.S. BROOKS, National High Magnetic Field Laboratory, Florida State University, Tallahassee, Florida 32310, USA — The temperature and magnetic field- dependent in-plane resistivity measurements were used to determine anisotropic upper critical field, $H_{c2}(T)$, of the hole-doped iron-based superconductor $(\text{Ba}_{1-x}\text{K}_x)\text{Fe}_2\text{As}_2$ over the whole doping range $x=0$ to $x=1$. We find clear saturation of $H_{c2}(T)$ line on $T \rightarrow 0$ in magnetic field perpendicular to the c -axis of the samples in the overdoped range of the phase diagram, suggesting strong paramagnetic limiting effects. Measurements reveal clear difference in the shapes of the $H_{c2}(T)$ lines for under-doped and over-doped compositions with similar T_c . Origin of this difference will be discussed.

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