

Three-dimensional Superconductivity and Vortex-glass Transition in $\text{La}_{1.87}\text{Y}_{0.13}\text{CuO}_4$

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The angular dependence of the critical current density ($J_c(\theta)$) and the vortex glass transition temperature ($T_g(\theta)$) in $\text{La}_{1.87}\text{Y}_{0.13}\text{CuO}_4$ were measured at different fields and temperatures. Both $J_c(\theta)$ and $T_g(\theta)$ showed a strong angular variation, which is typical for anisotropic superconductors. The angular variation could be described by using the anisotropic three-dimensional Ginzburg-Landau theory. From our analysis, we were able to estimate the anisotropy ratio.

keywords : Anisotropy, vortex-Glass