

SpringerLink

Journal of Superconductivity and Novel Magnetism

May 2015, Volume 28, Issue 5, pp 1515–1523 | Cite as

Presence of Pseudo-Path in the Interplane Penetration Depth of Layered YBa<sub>2</sub>Cu<sub>3</sub>O<sub>y</sub>

Authors

Authors and affiliations

Moses E. Emeteri Email author

Original Paper

First Online: 31 December 2014

Abstract

The concept of magnetic field effect (MFE) on cuprates is not new. However, little has been discussed on the magnetic field effects on the interplane penetration depth of yttrium barium copper oxide (YBCO). The orbital magnetoresistance of the YBCO were derived and analyzed to reflect its effect on the interplane penetration of layered YBCO. Though most of the anomalies in the YBCO can be associated with the lattice fluctuations, the interplane penetration depth is dependent on the orbital anomaly which dictates the interactions of particulates. The presence of pseudo-path was discovered to exist in the interplane penetration depth of the YBCO. The pseudo-path is observed to control other vital parameters of superconductivity, e.g., vortex dynamics, particulate interactions, etc.

Keywords

Pseudo-path Bloch magnetization Orbital anomalies Interactions YBCO

This is a preview of subscription content, log in to check access.

Personalised recommendations

Presence of Pseudo-Path in the Interplane Penetration Depth of Layered YBa<sub>2</sub>Cu<sub>3</sub>O<sub>y</sub> Buy options

Actions

Buy (PDF)

EUR 34.95

Springer Nature

© 2017 Springer International Publishing AG. Part of Springer Nature.