Verhandlungen
der Deutschen Physikalischen Gesellschaft e.V.

Regensburg 2000 – wissenschaftliches Programm

TT: Tiefe Temperaturen

TT 7: Postersitzung I: Amorphe- und Tunnelsysteme (1-8), Mesoskopische Systeme (9-21), Schwere Fermionen (22-32), Kernmagnetismus (33-34), Josephson-Kontakte und SQUIDs (35-45), TT-Detektoren und Kryotechnik (46-49)

TT 7.41: Poster

Montag, 27. März 2000, 14:30–18:00, A

Auswahlstatus für diesen Beitrag: gemäß den Sitzungseinstellungen

Realization of a Thin Film High-T_c π-SQUID — •H. Hilgenkamp[1,2], R.R. Schulz[1], B. Chesca[1], B. Goetz[1], C.W. Schneider[1], A. Schmehl[1], H. Bielefeldt[1], J. Mannhart[1], and C.C. Tsuei[3] — [1]Exp. Phys. VI, Center for Electronic Correlations and Magnetism, Augsburg University, 86135 Augsburg — [2]Present address: Department of Applied Physics, University of Twente, P.O. Box 217, 7500 AE Enschede, The Netherlands — [3]IBM T.J. Watson Research Center, P.O. Box 218, Yorktown Heights, NY 10598, USA.

The predominantly $d_{x^2-y^2}$ symmetry of the order parameter in most high-T_c superconductors provides the opportunity to construct novel Josephson junction circuits, in which part of the junctions are biased with a phase-difference of π. We present fabrication and measurements of an all high-T_c dc π superconducting quantum interference device (dc π-SQUID), realized in thin film technology on a tetracrystalline substrate [1]. This device contains a standard junction and a junction with a π-phase shift. The characteristics of the π-SQUID are compared with the properties of a standard high-T_c SQUID. The unique features of the π-SQUID offer important potential for applications. This work was supported by the BMBF (project number 13N6918/1).

[1] R.R. Schulz, B. Chesca, B. Goetz, C.W. Schneider, A. Schmehl, H. Bielefeldt , H. Hilgenkamp, J. Mannhart and C.C. Tsuei, *Appl. Phys. Lett.*, in press.