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Analysis of pairing symmetry for half-flux quantization measured in the YBCO-Pb corner junction and DC SQUIDs and in the tricrystal superconducting ring of YBCO HYUN-TAK KIM, ETRI in Korea — For cuprate high-Tc superconductors, the pairing symmetry of Cooper is still controversial and remains unsolved. This is a central issue for the mechanism of high-Tc superconductivity. For the measurements of flux quantization obtained in the YBCO-Pb corner junction [1], DC-SQUID SQUIDS [2,3,4] and in the tricrystal superconducting ring of YBCO [5,6], the results had suggested that the measured half fluxes are strong evidence of the dx2-y2 (or d) pairing symmetry. This has still an influence on the superconductor mechanism research. At this time, we feel reanalysis of the measured half-flux-quantum data, because of the unclear analysis on flux trap in the papers. The authors [1] analyzed that the Fraunhofer diffraction pattern is symmetry, and the authors [2-6] also suggested that the measured half-flux quantum comes from supercurrent induced by the superconducting ring. However, we found asymmetry of the Fraunhofer diffraction pattern, an anomalous large supercurrent, asymmetry in the half-flux quantum SQUID image. These are evidence of flux trap denying the d-wave symmetry. We suggest the s-wave pairing symmetry. [1] PRL 74(1995)797, [2] PRL 71(1993)2134, [3] PRL 74(1995)4523, [4] IEEE Trans. Appl. Super. 7(1997)2331, [5] PRL 73(1994)593, [6] Rev. Mod. Phys.. 72(2000)969.

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