Abstract Submitted
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Direct observation of THz radiation from cylindrical structure of intrinsic Josephson junction system of Bi2212 M. TSUJIMOTO, T. YAMAMOTO, H. MINAMI, K. KADOWAKI, M. TACHIKI, University of Tsukuba, U. WELP, W. KWOK, Argonne National Laboratory — Intense terahertz (THz) radiation was observed from a single crystalline high-T_c superconductor $Bi_2Sr_2CaCu_2O_{8+\delta}$ (Bi2212) system[1,2]. We have performed various experiments on THz radiation with Bi2212 rectangular mesa structure fabricated by Argon-ion-milling and photolithography technique with changing the sample parameters. In this work, we report new experimental results obtained with samples which have a cylindrical structure fabricated by focused ion beam milling. The intense emission of electromagnetic radiation can be obtained in the return blanch only. The frequency is directly measured by FT-IR spectrometer to be $f = 0.474$ THz in this particular sample of diameter with 90 μm. This frequency value is in good agreement with the fundamental cavity resonance mode frequency. 1) L. Ozyuzer et al., Science **318** (2007) 1291 2) K. Kadowaki et al., Physica C **468** (2008) 634-639

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