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Superfluid Density and Flux-Flow Resistivity Measurements of Multiple-Band Superconductor β-$PdBi_2$[1] TATSUNORI OKADA, YOSHINORI IMAI, ATSUTAKA MAEDA, University of Tokyo — β-$PdBi_2$ ($T_c^{max} = 5.4$ K) is a newcomer of the multiple-band superconductors, revealed by the specific heat and the upper critical field measurements [1], and the angle-resolved photoemission spectroscopy [2]. In addition, authors of ref. [2] observed the spin-polarized band dispersion and proposed that β-$PdBi_2$ is a candidate of topological superconductor. However, there is less information on superconducting properties so far. In order to clarify the superconducting gap function, we measured the temperature (T) and magnetic field (B) dependence of microwave complex conductivity of β-$PdBi_2$ single crystals. We found that the superfluid density exhibits the thermally activated T dependence, manifesting the absence of nodes in the superconducting gaps. We also found that the flux-flow resistivity increased with B with downward-convex shape. Based on some theories, we considered that such a behavior originated from the backflow of supercurrents around vortices reflecting rather small Ginzburg-Landau parameter ($\kappa \simeq 5$). [1] Y. Imai *et al.*, JPSJ **81**, 113708 (2011). [2] M. Sakano *et al.*, arXiv:1505.07231.

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