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Microwave Surface Impedance Measurements on Fe(Se,Te) Single Crystals under Finite Magnetic Fields HIDEYUKI TAKAHASHI, TATSUNORI OKADA, FUYUKI NABESHIMA, SHINJI KOSHIDA, YOSHINORI IMAI, ATSUTAKA MAEDA, Dept. of Basic Science, the University of Tokyo — We measured the microwave surface impedances of Fe(Se,Te) single crystals under magnetic fields up to 8 Tesla and extracted the flux flow resistivity, ρ_f, to investigate the quasiparticle dynamics inside the vortex core. Previously performed ρ_f measurements on several iron-based superconductors have revealed that the quasiparticle dynamics inside the vortex core can be described as that in the so-called "moderately clean" regime, in which the mean free path is comparable to the coherence length [1,2]. The mean free path in Fe(Se,Te) in the normal state is smaller than those in other superconductors. In addition, London penetration depth shows quadratic temperature dependence because of the strong pair-breaking [3]. Therefore, it is interesting to investigate the ρ_f to clarify whether the strong quasiparticle scattering affects the quasiparticle dynamics inside the vortex core. We also discuss the surface impedances of Fe(Se,Te) thin films which have a higher T_c than the bulk crystals.

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[2] H. Takahashi *et al.*, Phys. Rev. B **86** (2012) 144525.
[3] H. Takahashi *et al.*, Phys. Rev. B **84** (2011) 132503.

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