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Normal state electrodynamics of superconducting $Cu_xBi_2Se_3$ KENNETH BURCH, Boston College, LUKE SANDILANDS, ANJAN REIJNDERS, University of Toronto, MARKUS KRIENER, YOICHI ANDO, Osaka University — Using infrared spectroscopy, we have studied the bulk electronic structure of superconducting $Cu_xBi_2Se_3$ (x = 0.15, 0.2, 0.3, 0.4), a candidate topological superconductor. The screened plasma frequency is observed to red-shift monotonically with doping, ranging from 198 meV for x = 0.15 to 156 meV for x = 0.4. We have also investigated the effects of electron-boson coupling in this compound. An extended Drude analysis of the free carrier charge dynamics suggests a mass enhancement m^*/m_b of roughly 1.2 for x = 0.2.

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