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Normal state charge dynamics of novel iron-based superconductor $FeTe_{0.87}S_{0.13}$ probed with infrared spectroscopy S.V. DORDEVIC, The University of Akron, N. STOJILOVIC, University of Wisconsin-Oshkosh, ADAM KONCZ, The University of Akron, RONGWEI HU, C. PETROVIC, Brookhaven National Lab — We will present the results of our spectroscopic studies of novel iron-based superconductor $FeTe_{0.87}S_{0.13}$ with $T_c = 8$ K. Infrared and optical measurements have been performed over a broad range of frequencies (50 - 50,000 cm^{-1} and temperatures (10 - 300 K). Our results reveal unusual normal state: incoherent charge dynamics and absence of well defined quasiparticles. Unlike other iron-based superconductors, the structural and magnetic phase transitions at $T \simeq 30$ K do not seem to have significant effect on optical properties of $FeTe_{0.87}S_{0.13}$.

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