Abstract Submitted
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Electrodynamic response in the electronic nematic phase of $BaFe_2As_2$[1] C. MIRRI, ETH Zurich — We measure the in-plane optical reflectivity of $BaFe_2As_2$ beyond the MIR interval, studied so far, covering the spectral range from the far infrared (FIR) to the ultraviolet (UV), at several combinations of pressure, used to detwin the specimen, and temperature. Our goal is to probe the anisotropic response in the real part of the optical conductivity $\sigma_1(\omega)$, extracted from the reflectivity data via Kramers-Kronig transformations. We thus elucidate how the anisotropic optical metallic response evolves as a function of pressure, considered as an external symmetry breaking field, and across the ferro-elastic structural transition. At the center of our attention we then place the analysis of the spectral weight reshuffling over a large energy interval. We provide relevant information about the evolution of the effective metallic charge dynamics, upon tuning the degree of detwinning, in terms of scattering rate and plasma frequency of the itinerant charge carriers, which allows a direct link to the yet astonishing *dc* transport properties.

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