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Terahertz conductivity measurements of MnSi

Monday 3 June 2019 11:30 (15 minutes)

We will present time-domain terahertz spectroscopy measurements of the optical conductivity of MnSi thin films. Measurements cover a temperature range $T = 5\text{--}300\text{ K}$ and a frequency range $\nu = 0.1\text{--}4\text{ THz}$. We find that at low temperatures and frequencies, the scattering rate is proportional to both the square of the temperature and the square of the frequency, as predicted Fermi liquid theory. As the temperature increases further, the system loses quasiparticle coherence, while the plasma frequency inferred from a Drude fit decreases dramatically.

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Session Classification: M1-11 Probing and controlling matter with light I (DCMMP) | Sonder et contrôler la matière avec de la lumière I (DPMCM)

Track Classification: Condensed Matter and Materials Physics / Physique de la matière condensée et matériaux (DCMMP-DPMCM)