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**The fate of quasiparticles in the superconducting state** S.V. DORDEVIC, The University of Akron, D. VAN DER MAREL, Universite de Geneve, Switzerland, C.C. HOMES, Brookhaven National Laboratory — Quasiparticle properties in the superconducting state are masked by the superfluid and are not directly accessible to infrared spectroscopy. We show how one can use a Kramers-Kronig transformation to separate the quasiparticle from superfluid response and extract intrinsic quasiparticle properties in the superconducting state. We also address the issue of a narrow quasiparticle peak observed in microwave measurements, and demonstrate how it can be combined with infrared measurements to obtain unified picture of electrodynamic properties of cuprate superconductors.

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