

Abstract Submitted
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Infrared

and magneto-optical spectroscopy of Cd_3As_2 ¹ ANA AKRAP, University of Geneva, M. HAKL, CNRS-UGA-UPS-INSA, S. TCHOUMAKOV, Univ. Paris-Sud, Univ. Paris-Saclay, IRIS CRASSE, University of Geneva, J. KUBA, CNRS-UGA-UPS-INSA, M.O. GOERBIG, Univ. Paris-Sud, Univ. Paris-Saclay, C.C. HOMES, Brookhaven National Laboratory, O. CAHA, J. NOVAK, Masaryk University, F. TEPPE, Université Montpellier, S. KOOHPAYEH, LIANG WU, N.P. ARMITAGE, T. MCQUEEN, The Johns Hopkins University, A. NATEPROV, E. ARUSHANOV, Academy of Sciences of Moldova, Q.D. GIBSON, R.J. CAVA, Princeton University, D. VAN DER MAREL, University of Geneva, C. FAUGERAS, G. MARTINEZ, M. POTESKI, M. ORLITA, CNRS-UGA-UPS-INSA — We report infrared measurements on Cd_3As_2 single crystals with different orientations and different doping levels, as well as low-magnetic field measurements of Kerr effect. The resulting optical conductivity is isotropic and independent of the crystal direction. Linear regime of the real part of the optical conductivity qualitatively agrees with massless particles, and is consistent with massless Kane electrons. Two contributions may be separated in the optical conductivity in zero and finite magnetic field. We propose that these two contributions originate from the bulk of the crystal, and a thin depletion layer.

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