

Abstract Submitted  
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**Electrodynamic response of type II Weyl semimetal YbMnBi<sub>2</sub>**<sup>1</sup>

M. CHINOTTI, A. PAL, Dept. of Physics, ETH Zurich, C. PETROVIC, W.J. REN, Brookhaven National Lab., L. DEGIORGI, Dept. of Physics, ETH Zurich — Weyl fermions play a major role in quantum field theory but have been quite elusive as fundamental particles. Materials based on quasi two-dimensional bismuth layers were recently designed and provide an arena for the study of the interplay between anisotropic Dirac fermions, magnetism and structural changes, allowing the formation of Weyl fermions in condensed matter. Here, we present an optical investigation of YbMnBi<sub>2</sub>, a representative type II Weyl semimetal, and contrast its excitation spectrum with the optical response of the more conventional semimetal EuMnBi<sub>2</sub>. Our comparative study allows us disentangling the optical fingerprints of type II Weyl fermions, but also challenge the present theoretical understanding of their electrodynamic response.

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