

Abstract Submitted
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Quasi-Topological Electromagnetic Response of Line-node Semimetals¹ SRINIDHI RAMAMURTHY, TAYLOR HUGHES, University of Illinois at Urbana-Champaign — Topological semimetals are gapless states of matter which have robust surface states and interesting electromagnetic responses. We consider the electromagnetic response of gapless phases in $3 + 1$ -dimensions with line nodes. We show through a layering approach that an intrinsic 2-form $\mathcal{B}_{\mu\nu}$ emerges in the effective response field theory that is determined by the geometry and energy-embedding of the nodal lines. This 2-form is shown to be simply related to the charge polarization and orbital magnetization of the sample. We conclude by discussing the relevance for recently proposed materials and heterostructures with line-node fermi-surfaces.

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