

Abstract Submitted
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Axial anomaly of Lifshitz fermions with arbitrary anisotropic scaling z in $2n$ spacetime dimensions XUEDA WEN, Physics Department, UIUC
— We calculate the axial anomaly of a Lifshitz fermion with arbitrary anisotropy scaling exponent z which is coupled to gauge fields in $2n$ spacetime dimensions. We find that the result is identical to the relativistic case. The conclusion is verified with both path integral methods and spectral methods in $2n$ spacetime dimensions. Our work is a generalization of I. Bakas' work (arXiv:1110.1332) which focuses on (3+1) dimensions. In addition, we discuss the application of our conclusion to transport processes in quantum Hall systems as well as Weyl semi-metals.

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