

Abstract Submitted
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Weyl semimetal generated from Dirac semimetal using off-resonance light JIE CAO, Hohai University — We propose a simple realization of a three-dimensional (3D) Weyl semimetal phase using off-resonance circularly polarized light in a 3D Dirac semimetal with mirror symmetry. We show that a fourfold degeneracy Dirac node can be further evolved into two Weyl nodes in the context of our simplified model using both analytical and numerical methods. Observable properties of Weyl semimetal such as surface Fermi arc can be realized since the distance of the two Weyl points in momentum space is proportional to the Fermi velocity. We also use the axionic field theory to discuss the realistic case and find similar conclusion.

APS Abstracts

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