

Abstract Submitted
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Tunable Weyl Points in Periodically Driven Nodal Line Semimetals¹ ZHONGBO YAN, ZHONG WANG, Institute for Advanced Study, Tsinghua University — Weyl semimetals and nodal line semimetals are characterized by linear band touching at zero-dimensional points and one-dimensional lines, respectively. We predict that a circularly polarized light drives nodal line semimetals into Weyl semimetals. The Floquet Weyl points thus obtained are tunable by the incident light, which enables investigations of them in a highly controllable manner. The transition from nodal line semimetals to Weyl semimetals is accompanied by the emergence of a large and tunable anomalous Hall conductivity. Our predictions are experimentally testable by transport measurement in film samples or by pump-probe angle-resolved photoemission spectroscopy. [Reference: Phys. Rev. Lett. 117, 087402 (2016)]

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