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摘要: Helical metals realized at the surfaces of topological insulators have recently attracted wide attention due to their potential applications in spintronics. In this Rapid Communication we propose to realize helical metals through the application of THz light on common two-dimensional semiconductors and discuss their observable properties. We show that the application of circularly polarized light enables coherent manipulation of magnetization. Moreover, for a range of chemical potentials the system behaves as a helical metal, exhibiting a large anomalous Hall conductivity and associated magnetoelectric effect. Proposed dynamical engineering of material properties through light in much-studied materials opens new perspectives for future applications.
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