

Abstract Submitted
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Quantum Anomalous Hall Effect in Magnetic Insulator Heterostructure GANG XU, JING WANG, Stanford University, CLAUDIA FELSER, Max Planck Institute for Chemical Physics of Solids, XIAOLIANG QI, SHOUCHEG ZHANG, Stanford University, STANFORD UNIVERSITY COLLABORATION, INSTITUTE OF PHYSICS,CAS,CHINA COLLABORATION, MAX PLANCK INSTITUTE FOR CHEMICAL PHYSICS OF SOLIDS, DRESDEN, GERMANY COLLABORATION — Based on *ab initio* calculations, we predict that a monolayer of Cr-doped $(\text{Bi,Sb})_2\text{Te}_3$ and GdI_2 heterostructure is a quantum anomalous Hall insulator with a non-trivial band gap up to 38 meV. The principle behind our prediction is that the band inversion between two topologically trivial ferromagnetic insulators can result in a non-zero Chern number, which offers a better way to realize the quantum anomalous Hall state without random magnetic doping. According to our study, the working temperature of QAH effect will be enormously increased. Moreover, we predict that 3D quantum anomalous Hall insulator could be realized in $(\text{Bi}_{2/3}\text{Cr}_{1/3})_2\text{Te}_3 / \text{GdI}_2$ superlattice.

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