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Nontrivial spin-texture of the surface states in topological crystalline insulator SnTe YUNG JUI WANG, HSIN LIN, Northeastern U. (NU), WEI-FENG TSAI, National Sun Yat-sen U., Taiwan, SU-YANG XU, M. Z. HASAN, Princeton U., A. BANSIL, NU — We present a first principles investigation of the nontrivial surface states and their spin-texture in the topological crystalline insulator SnTe[1,2]. The surface state dispersion on the [001] surface is found to support four Dirac-cones centered along the intersection of the mirror plane and the surface plane. The in-plane spin-texture displays helicity and indicates a nontrivial mirror Chern number of -2, distinct from that of -1 in a Z_2 topological insulator such as Bi/Sb. The surface state dispersion and the associated spin-texture are shown to provide an experimental route for determining the presence of a nontrivial Chern number. Work supported by the US DOE.

[1] T. H. Hsieh *et al.*, Nature Commun. **3**, 982 (2012).

[2] S. Y. Xu *et al.*, Nature Commun. (2012 in press). Preprint at <http://arXiv.org/abs/1210.2917>.

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