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BHZ model edge states on Mobius strip CHRISTOPHER MOGNI,
VICTOR VAKARYUK, OLEG TCHERNYSHYOV, Johns Hopkins University —
We present analytical edge state solutions to the Bernevig-Hughes-Zhang (BHZ) model of a quantum spin hall topological insulator with Mobius geometry. The edge state solutions are obtained by solving the differential equations governing the BHZ model. The edge states satisfy both inverted periodic boundary conditions and single-valuedness boundary conditions. Furthermore, we develop a classification of boundary conditions compatible with the BHZ model insulator with Mobius geometry. We demonstrate that in the limit of large strip length that there exists a finite energy gap between the edge states. This energy gap does not exist for strips with periodic boundary conditions.

Christopher Mogni
Johns Hopkins Univ

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