

Abstract Submitted  
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**Synthetic gauge flux and Weyl points in acoustic systems.**<sup>1</sup> MENG XIAO, stanford university, WEN-JIE CHEN, WEN-YU HE, C. T. CHAN, the Hong Kong University of Science and Technology — We consider acoustic systems comprising a honeycomb lattice in the xy plane and periodic along the z direction. As  $k_z$  is a good quantum number here, for each fixed  $k_z$ , this system can be treated as a reduced two-dimensional system. By engineering the interlayer coupling in the z-direction, we show that we can realize effective inversion symmetry breaking and synthetic staggered gauge flux in the reduced two-dimensional system. The realizations of chiral edge states for fixed values of  $k_z$  are direct consequences of the staggered gauge flux. And we then show that the synthetic gauge flux is closely related to the Weyl points in the three-dimensional band structure.

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