

Abstract Submitted
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Topological property for magnetic flux tubes in a two-dimensional electron gas LU-YAO WANG, National Chiao Tung University, dept. of Electrophysics, ZHIGUO LV, Shanghai Jiao Tong University, dept. of Physics, CHON-SAAR CHU, National Chiao Tung University, dept. of Electrophysics — We have studied the energy spectrum in the presence of square magnetic flux-tubes in a two-dimensional electron gas. Our finding is that the Dirac-like dispersion can be formed out between the third and the fourth magnetic subbands without including the Zeeman interaction. This Dirac-like dispersion is not band-inverted type with a global gap. This Dirac-like dispersion becomes band-inverted when the Zeeman interaction is included. We expect that the inverted magnetic subbands due to the Zeeman interaction can be recognized as the topological insulator. This topology property can be supported by the Chern number from the magnetic subbands.

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