

Abstract Submitted
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The Haldane model under uniaxial strain¹ YEN-HUNG HO, National Tsing Hua University, TAIWAN, EDUARDO CASTRO, Universidade de Lisboa, PORTUGAL, MARIA VOZMEDIANO, Instituto de Ciencia de Materiales de Madrid, and CSIC, SPAIN, MIGUEL CAZALILLA, National Tsing Hua University, and National Center for Theoretical Sciences (NCTS), TAIWAN — The topological features of Haldane model under strain are studied using a tight-binding approach. Strain induces a time-reversal preserving pseudo-magnetic field that quantizes the bulk states inducing pseudo Landau levels. Unlike the time-reversal symmetry breaking induced by a real magnetic field, strain lifts the degeneracy of the zero-energy Landau level in each valley. The degeneracy is also lifted in the presence of a potential that breaks the sublattice inversion symmetry. In addition, strain also modifies locally the Fermi velocity and induces a tilt of the Landau levels.

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