

Abstract Submitted
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Theory of topological phases in multilayer Graphene

XIAO LI, ZHENHUA QIAO, QIAN NIU, Department of Physics, The University of Texas at Austin — We present microscopic theories of possible topological phases (i.e. quantum anomalous Hall effect, quantum valley Hall effect, and two-dimensional topological insulators) in bilayer graphene systems. We show the phase diagrams as well as the resulting nontrivial edge states in these systems. We further generalize our findings to trilayer graphene systems, where similar topological states may exist. Finally, we give low energy effective models to reveal the underlying physics of these topological states.

Xiao Li
Department of Physics, The University of Texas at Austin

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