

Abstract Submitted
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Low-energy Landau levels of AB-stacked zigzag graphene ribbons¹ YUAN-CHENG HUANG, Center for General Education, Kao Yuan University — The low energy bands of AB-stacked zigzag graphene ribbons in the presence of a uniform perpendicular magnetic field are investigated by the Peierls coupling tight-binding model. They are dominated by the \mathbf{B} -field strength, the interlayer interactions, and the ribbon width. Many dispersionless Landau levels and parabolic energy bands exist along k_x and k_z directions, respectively. The former are doubly degenerate, while state degeneracy is absent for the latter. The occupied valence bands are asymmetric to the unoccupied conduction bands about the Fermi level. Such features are directly reflected in density of states. DOS exhibits a lot of asymmetric prominent peaks because of 1D parabolic bands. The predicted magnetoelectronic properties could be examined by the experimental measurements on transport conductance and absorption spectra.

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