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Magneto-electronic properties of multilayer graphenes JEI WANG, JHAO-YING WU, Department of Physics, National Cheng Kung University, CHEN-PENG CHANG, Center for General Education, Tainan University of Technology, MING-FA LIN, Department of Physics, National Cheng Kung University — We develop the generalized Peierls tight-binding model to study the low-energy electronic properties of multilayer graphenes (MLGs) in a uniform perpendicular magnetic field. The Landau levels (LLs) in MLG can be categorized into some groups according to their wavefunction distributions among different sublattices. Their dispersions strongly depend on the field strength, layer number and stacking configuration. The level degeneracies in even number of layers are the same with those in monolayer graphene, i.e., four-fold degeneracy. However, in odd number ones, most LLs are doubly degenerate because the spatial inversion symmetry is broken. There exist LL crossings or anti-crossings during the variation of magnetic field, a feature that may reflect in transport experiments. The carrier density distribution in zero fields is also included, which provides an alternative way to understand the grouped LLs.

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