

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Optical properties of AAB-stacked trilayer graphene. CHIH-WEI CHIU, Department of Physics, National Kaohsiung Normal University, Taiwan, RONG-BIN CHEN, Center of General Studies, National Kaohsiung Marine University, Taiwan, MING-FA LIN, Department of Physics, National Cheng Kung University, Taiwan, YUAN-CHENG HUANG, Center for General Education, Kao Yuan University, Taiwan — The band structures and optical properties of AAB-stacked trilayer graphenes (AAB-TLG) are calculated by the tight-binding model and gradient approximation. There are one pair of parabolic bands and two pairs of wavy bands at low energy, and three pairs of saddle points at the middle energy. At zero electric field, 3^2 excitation channels exist in both the low and middle frequencies, and cause the very rich joint density of states (JDOS). However, the structures in the JDOS do not appear in the absorption spectra completely. In the spectra, due to the velocity metric elements, the transitions between the same pair only make the slight contributions in the low frequency, except for the transition between the pair of the lowest bands. Furthermore, three transitions with the similar energies at the saddle points peaks lead to a strong peak in the middle frequency. The energy dispersions and the energy spacing exhibit obvious variations with the change of the electric field, and thus the absorption spectra..

Chi-Hsuan Lee
National Chengchi Univ

Date submitted: 09 Nov 2015

Electronic form version 1.4