Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Interface Landau levels in graphene monolayer-bilayer junction MIKITO KOSHINO, Department of Physics, Tohoku University, TAKESHI NAKANISHI, Nanotube Research Center, AIST, TSUNEYA ANDO, Department of Physics, Tokyo Institute of Technology — Electronic structure of graphene monolayer-bilayer junction in a magnetic field is studied within an effective-mass approximation. The energy spectrum is characterized by interface Landau levels, i.e., the locally flat bands appearing near the boundary region, resulting in a series of characteristic peaks in the local density of states. Their energies are independent of boundary types such as zigzag or armchair. In the atomic scale, the local density of states shows a Kekulé pattern due to the valley mixing in the armchair boundary, while does not in the zigzag boundary.

Mikito Koshino
Department of Physics, Tohoku University

Date submitted: 17 Nov 2010 Electronic form version 1.4