Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Chirality Sum Rule in Graphene Multilayers[1] HONGKI MIN, ALLAN H. MACDONALD, The University of Texas at Austin — We show that the low energy electronic structure of arbitrarily stacked graphene multilayers with nearest-neighbor interlayer tunneling consists solely of chiral pseudospin doublets. Although the number of doublets in an N-layer system depends on the stacking sequence, the pseudospin chirality sum is always N. It follows that N-layer stacks always have N distinct Landau levels at $E = 0$ for each spin and valley, and that the quantized Hall conductivity $\sigma_{xy} = \pm(4e^2/h)(N/2 + n)$ where n is a non-negative integer.

[1]This work was supported by the Welch Foundation, by NSF-NRI SWAN, and by the National Science Foundation under grant DMR-0606489.

Hongki Min
The University of Texas at Austin

Date submitted: 04 Dec 2007 Electronic form version 1.4