Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Molecular Dynamics Studies of Graphene Nanobubbles ZENAN QI, HAROLD PARK, Boston University, VITOR M. PEREIRA, National University of Singapore, ANTONIO H. CASTRO-NETO, National University of Singapore and Boston University, DAVID K. CAMPBELL, Boston University — We apply classical molecular dynamics to study pressure-induced deformations and the resulting pseudomagnetic (PSM) fields for monolayer graphene nanobubbles (NBs) of various geometries. We obtain the PSM field distributions for triangular, square, rectangular, hexagonal, and circular graphene NBs and find that in most cases the PSM fields near the tops of the NBs are smaller than around the NB edges. For circular NBs of diameter smaller than about 2nm, we find that the PSM field contribution from bending and curvature becomes comparable to from the traditional in-plane component of the gauge field.

David Campbell
Boston University

Date submitted: 08 Nov 2012 Electronic form version 1.4