Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Quasiparticle carrier dynamics in graphene from first principles[1]

CHEOL-HWAN PARK, Department of Physics and Astronomy and Center for Theoretical Physics, Seoul National University, Seoul 151-747, Korea, NICOLA BONINI, Department of Physics, King's College London, London WC2R 2LS, UK, THIBAULT SOHIER, IMPMC, Universite Pierre et Marie Curie, CNRS, 4 Place Jussieu, 75005 Paris, France, GEORGY SAMSONIDZE, BORIS KOZINSKY, Robert Bosch LLC, Cambridge, MA 02142, USA, MATTEO CALANDRA, FRANCESCO MAURI, IMPMC, Universite Pierre et Marie Curie, CNRS, 4 Place Jussieu, 75005 Paris, France, NICOLA MARZARI, Theory and Simulation of Materials, Ecole Polytechnique Federale de Lausanne, 1015 Lausanne, Switzerland —
It is important to understand how a charge carrier in real materials interacts with other charge carriers or with the lattice vibration; these two effects, electron-electron interactions and electron-phonon interactions, respectively, largely determine the quasiparticle and transport properties of a material. In this presentation, we will show that some aspects of quasiparticle dynamics in graphene can be described by first-principles calculations considering these two effects.

[1]This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT & Future Planning NRF-2013R1A1A1060287.

Cheol-Hwan Park
Department of Physics and Astronomy and Center for
Theoretical Physics, Seoul National University,
Seoul 151-747, Korea

Date submitted: 17 Nov 2013 Electronic form version 1.4