Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Hot carrier response in gapped bilayer graphene[1] GRANT AIVAZIAN, JASON ROSS, Univeristy of Washington, K. WATANABE, T. TANIGUCHI, K. KITAMURA, National Institute for Materials Science, DAVID COBDEN, XIAODONG XU, Univeristy of Washington — Recently bilayer graphene has been shown to develop a bandgap upon breaking of inversion symmetry by a perpendicular electric field that is *in situ* tunable between zero and several hundred meV (corresponding to wavelengths in the mid-IR). Such unique tunability offers bilayer graphene a niche in mid-IR optoelectronic devices where a lack of high performance photodetectors exists. In this work we have performed spatially and temporally resolved photocurrent measurements in a dual-gated bilayer graphene FET under continuous-wave and pulsed laser excitation. We find that photocurrent generation in native bilayer graphene is dominated by hot carriers, as is the case in monolayer graphene, but it behaves very differently from monolayer graphene once a bandgap has been opened.

[1]Work supported by the NSF Early Career Grant and DARPA N66001-11-1-4124.

Grant Aivazian
Univeristy of Washington

Date submitted: 17 Dec 2012 Electronic form version 1.4