Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Observation of Large Intrinsic Gap in Rhombohedral-Stacked Tetralayer Graphene KEVIN MYHRO, SHI CHE, YANMENG SHI, YONGJIN LEE, KEVIN THILAHAR, University of California, Riverside, DMITRY SMIRNOV, National High Magnetic Field Laboratory, Tallahassee, FL, CHUN NING LAU, University of California, Riverside — Few-layer graphene has attracted attention in the scientific community as a novel 2D material due to its observed quantum hall effect, high electronic mobility, high transparency and tensile strength, among other properties. In rhombohedral-stacked few-layer graphene, the very flat band near the charge neutrality point is unstable to electronic interactions, and gives rise to states with spontaneous broken symmetries. Intrinsic gaps of ˜2 meV and 40 meV are observed in bilayer and trilayer graphene, respectively. Here, we report the observation of an even larger gap in suspended rhombohedral-stacked tetralayer graphene (r-4LG) samples. We will present the latest data of the evolution of the gapped state with temperature and external fields, and compare with theoretical models.

Kevin Myhro
University of California, Riverside

Date submitted: 06 Nov 2015 Electronic form version 1.4