Band Structure of K(2x2) on graphene

JESSICA MCCHESNEY, AARON BOSTWICK, TAISUKE OHTA, Lawrence Berkeley National Laboratory, THOMAS SEYLLER, K.V. EMTSEV, Universit"at Erlangen-N"urnberg, KARSTEN HORN, Fritz Haber Institute, ELI ROTENBERG, Lawrence Berkeley National Laboratory — The electronic structure of K(2x2) on graphene, the same stochiometry as bulk KC₈, was studied using angle-resolved photoemission spectroscopy (ARPES). In addition to bands derived from the graphene π states an intercalant induced “interlayer band” is observed centered at Γ. Of these two bands, the dominant mass renormalization occurs in the π-derived bands, as determined by characterization of the “kinks” in the dispersion measured by ARPES. This suggests that the superconductivity in bulk KC₈ has a more important role than the interlayer band.

Jessica McChesney
Lawrence Berkeley National Laboratory

Date submitted: 14 Dec 2007