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STM characterization of a graphitized SiC(0001)surface VICTOR BRAR, YUANBO ZHANG, YOSSI YAYON, Dept. of Physics, University of California, Berkeley, TAISUKE OHTA, JESSICA MCCHESNEY, ELI ROTENBERG, Advanced Light Source, Lawrence Berkeley National Laboratory, MIKE CROMMIE, Dept. of Physics, University of California, Berkeley, DEPT. OF PHYSICS, UNIVERSITY OF CALIFORNIA, BERKELEY COLLABORATION, ADVANCED LIGHT SOURCE, LAWRENCE BERKELEY NATIONAL LABORATORY COLLABORATION — The two-dimensional electron gas in a single graphene sheet exhibits unique properties due the cone-shaped electron band structure near the Fermi energy. Recently the growth of a single layer of graphene on SiC(0001) has been demonstrated, opening new possibilities for fabricating large scale graphene-based devices. We have performed scanning tunneling microscopy and spectroscopy of single and bi-layer graphene films on SiC(0001). Atomically resolved topographs and dI/dV maps show clear differences between the single and bi-layer surfaces at different length scales. We have characterized the energy dependence and spatial distribution of the electron local density of states in these single and bi-layer films.

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