

Abstract Submitted
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Tunneling Magneto-Conductance Oscillations in Epitaxial Graphene KEVIN D. KUBISTA, DAVID L. MILLER, MING RUAN, WALT A. DE HEER, PHILLIP N. FIRST, Georgia Institute of Technology, GREGORY M. RUTTER, JOSEPH A. STROSCIO, Center for Nanoscale Science and Technology, NIST — Scanning tunneling microscopy (STM) and spectroscopy (STS) at a temperature of 4 K are used to study the electronic properties of epitaxial graphene on SiC in a magnetic field applied perpendicular to the graphene plane. While changing the magnetic field we observe oscillations in the tunneling conductance, dI/dV (tunneling magneto-conductance oscillations, or TMCO). These are similar to Shubnikov-de Haas oscillations of magnetoresistance, but differ in important aspects. Magnetic field scans acquired at multiple tunneling injection energies allow us to create a density-of-states contour map as a function of both in energy and magnetic field. The data are well-described by the monolayer-graphene density of states, with small additional features that may indicate coherent effects. This work was supported in part by NSF, NRI-INDEX, and the W. M. Keck Foundation.

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