

Abstract Submitted
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Quantum Oscillations in Microwave Conductance of Graphene

PEI-HSUN JIANG, NHMFL and Princeton University, ANDREA YOUNG, PHILIP KIM, Columbia University, LLOYD W. ENGEL, NHMFL, DANIEL C. TSUI, Princeton University — We report measurements of the microwave-frequency, low-temperature conductance of mechanically-exfoliated graphene on SiO₂/Si. The two-terminal microwave conductance (G) of a graphene flake is calculated from signals transmitted through a planar metal film pattern which resides on the SiO₂ surface and connects to the graphene. At high magnetic field, we observe quantum oscillations of G vs the magnetic field and the graphene carrier density. We find G to be independent of the frequency (f) from DC up to 8.5 GHz. This result is consistent with the low f limit, $2\pi f\tau \ll 1$, where τ is the scattering time.

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