

Abstract Submitted
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Abnormal temperature-dependent self-energy in graphene
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ALS, LBNL, EUGENE HALLER, RAMAMOORTHY RAMESH, DUNG-HAI LEE,
ALESSANDRA LANZARA, UC Berkeley, LBNL — Dynamics of charge carriers
are determined by their self-energy associated with many-body interactions. By
using angle-resolved photoemission spectroscopy, we study the origin of abnormal
temperature-dependent self-energy in graphene, and discuss the results in terms of
a quantum phase transition as a function of temperature. Our findings provide an-
other example of novel electronic properties of graphene and deeper understanding
of the ground state of charge carriers in graphene.

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