

Abstract Submitted
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Quantum Critical Scaling of Graphene¹ DANIEL E. SHEEHY,
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versity — We show that the emergent relativistic symmetry of electrons in graphene
near its quantum critical point (QCP) implies a crucial importance of the Coulomb
interaction. We derive scaling laws, valid near the QCP, that dictate the nontrivial
magnetic and charge response of interacting graphene. Our analysis yields numer-
ous predictions for how the Coulomb interaction will be manifested in experimental
observables such as the diamagnetic response and electronic compressibility.

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