

Abstract Submitted  
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**Anomalous Thermoelectric Effect in Graphene** TOMAS LOFWANDER, MIKAEL FOGELSTROM, Chalmers University of Technology — We present calculations of the thermal and electric linear response in graphene, including disorder in the self-consistent t-matrix approximation [1]. For strong impurity scattering, near the unitary limit, the formation of a band of impurity states near the Fermi level leads to that Mott's relation holds at low temperature. For higher temperatures, there are strong deviations due to the linear density of states. The low-temperature thermopower is proportional to the inverse of the impurity potential and the inverse of the impurity density. Information about impurity scattering in graphene can be extracted from the thermopower, either measured directly, or extracted via Mott's relation from the electron-density dependence of the electric conductivity.

[1] T. Löfwander and M. Fogelström, Phys. Rev. B **76**, 193401 (2007).

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