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The conductivity of pure graphene SUBIR SACHDEV, LARS FRITZ, Harvard University, JOERG SCHMALIAN, Iowa State University — Pure graphene, in the absence of impurities or bias voltage, is described by a theory of Dirac fermions with Coulomb interactions. We argue that this theory has a finite conductivity, σ, and show that at frequencies $\omega \ll k_B T/\hbar$ (where T is absolute temperature) $\sigma = \Xi(e^2/h)(\ln(W/T))^2$, where W is the bandwidth, and Ξ is a *universal* number. We compute Ξ by the solution of a quantum Boltzmann equation. The influence of a dilute concentration of impurities and finite bias voltage is also discussed.

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