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**Hot electron effect and weak localization in suspended multilayer graphene** CARLOS DIAZ PINTO, SUNGBAE LEE, NELKA WIJESINGHE, HAIBING PENG, Department of Physics and Texas Center for Superconductivity, University of Houston — We study the differential conductance ( $dI/dV$ ) of suspended multilayer graphene as a function of source drain bias  $V_d$  and temperature  $T$ . A dip of  $dI/dV$  has been observed near  $V_d=0$ , along with phonon-induced anomalies at higher  $V_d$ . We find a logarithmic dependence of  $dI/dV$  on both  $V_d$  and  $T$ . The logarithmic  $V_d$  dependence can be explained with the hot electron effect and the logarithmic  $T$  dependence is attributed to the weak-localization in two-dimensions. The magnetoconductance data for suspended multilayer graphene agree remarkably well with the weak localization theory considering both the inelastic and elastic scattering processes related to the chiral nature of graphene carriers.

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