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Electronic transport in Chemically-doped Graphene ABDOLLAH DADGAR, Columbia University — Chemical doping is a well-known technique to introduce carriers into semiconductors. Previously, we have studied the atomic and electronic structure of graphene doped with nitrogen, and have shown that the dopants primarily incorporate in the graphitic form. Such graphitic dopants are sources of strong intervalley scattering in graphene. In this work, we will describe the effect of these scattering centers on electronic transport in N-doped graphene films produced on SiO2 and BN substrates. We will discuss the mobility and charge carrier concentration inferred from field effect measurements and will discuss the temperature dependent elastic and inelastic scattering rates obtained from weak localization measurements.

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