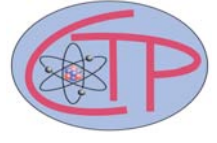




NEW YORK CITY COLLEGE OF TECHNOLOGY
Physics Department
Center for Theoretical Physics



Momentum resolved optical pump-probe spectroscopy in monolayer graphene: An analytical model and measurements

Presented by:

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Abstract

The interband optical transitions lie in the very heart of graphene-based optoelectronics and are subject to the pseudospin-selection rule resulting in the anisotropic photocarrier occupation with the life-time of a few tens of fs. Here, we report polarization and fluence dependent ultrafast pump-probe spectroscopy of high-quality monolayer graphene along with the analytical model aimed to describe the measurements. This frame work allows us to quantify and control the relative contributions of both the strongly non-equilibrium anisotropic occupation and hot Fermi-Dirac photocarrier distribution to the total differential transmission measured. Application of the model to the graphene-based photodetection is discussed.

Light refreshments will be served.