北京大学量子材料科学中心

International Center for Quantum Materials, PKU

中心系列讲座 ICQM Weekly Seminar Series

Landau Level Spectroscopy of Graphene and Graphite

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Time: 4:00pm, Dec. 15, 2011 (Thursday)
时间：2011年12月15日（周四）下午4:00
Venue: Room 607, Conference Room A , Science Building 5
地点：理科五号楼607会议室

Abstract

The electronic band structures of graphene and graphite exhibit unusual low-energy dispersion relation, radically different from the parabolic bands common to conventional two-dimensional semiconductors. Most interestingly, the charge carriers in graphitic systems mimic relativistic, massless Dirac particles, leading to intriguing new phenomena. In this talk, I focus on infrared optical studies of graphene and graphite in high magnetic fields. In particular, we resolved resonances between hole Landau levels and electron Landau levels (intraband transitions), as well as resonances between hole and electron Landau levels (interband transitions). We argue that many-body correlations of massless Dirac Fermions, considering both electron-electron and electron-phonon interactions, contribute considerably to our experimental results.

About the Speaker

Prof. Jiang received his Bachelor degree from Peking University in 1999 and his PhD from Northwestern University in 2005. After working as a postdoctoral fellow in Columbia University jointly with Princeton University and National High Magnetic Field Laboratory , he became a professor at Georgia Institute of Technology . His current research interests are (1) thermal transport and thermal management in graphene devices, and (2) infrared spectroscopic measurement of graphene.