北京大学量子材料科学中心
International Center for Quantum Materials, PKU

Weekly Seminar

Nonlinear electron transport on graphene

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Time: 4:00 pm, Sept.29, 2014 (Monday)
时间: 2014年9月29日（周一）下午 4:00
Venue: Conference Room A (607), No. 5 Science Building
地点: 理科五号楼607会议室

Abstract

Graphene, a monolayer of carbon atoms arranged in a hexagonal lattice demonstrates fascinating transport and optical effects. The talk is aimed at review of nonlinear transport and optical phenomena in this material. The special emphasis will be paid to the second and third harmonics generation as well as to the *dc* current generation under illumination of graphene by a polarized light. The mechanisms of the nonlinear response and its enhancement in graphene compared with conventional semiconductors are discussed.

1. A brief introduction in the energy spectrum of electrons in graphene. <<Massless Diracferminons>>.
2. Nonlinear transport and optical effects. Phenomenology based on the symmetry.
3.Microscopic models: dynamic Hall effect, chiral edge photocurrents, photogalvantic effect.
4. Comparison with experiments.
5. Conclusions

About the Speaker

Dr. Mikhail Glazov was born on June 8, 1982 in Leningrad, USSR. In 1999 he was graduated from Lyceum "Physical-Technical School" with honors(silver medal). From 1999 to 2005 he was studying at the St.-Petersburg State Polytechnical University. From 2005 to 2008 he was PhD student at Ioffe Physical Technical Institute of Russian academy of sciences. His research interests include semiconductor theory, physics of graphene, spin effects, light-matter coupling effects. Now he is the senior researcher at Ioffe Physical-Technical Institute of the Russian Academy of Sciences, St.Petersburg, Russia and also professor at the Condensed Matter Physics chair at Academic University.