ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ

ΤΜΗΜΑ ΦΥΣΙΚΗΣ

ΓΕΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ

PHYSICS COLLOQUIUM

Thursday, 15 October 2009
17:00-18:00

3rd Floor Seminar Room

''Relativistic Dynamics of Graphene''

Prof. Gordon W. Semenoff,
University of British Columbia

Abstract

Graphene is a one-atom thick layer of carbon atoms where electrons obey an emergent Dirac equation. Only five years after it first became available in the laboratory, graphene has captured the attention of a wide spectrum of scientists: from particle physicists interested in using graphene's emergent relativistic dynamics to study quantum field theory phenomena which are otherwise inaccessible to experiments, to condensed matter physicists fascinated by its unusual electronic properties and to technologists searching for materials for the next generation of electronic devices. This presentation will review the basic features of graphene. It will discuss some of the fundamental issues in relativistic quantum mechanics that graphene could be used to address. It will highlight how graphene's relativistic spectrum provides both advantages and challenges to its use in technological applications.

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