PHYSICAL MATHEMATICS SEMINAR

Defects and Ripples in Graphene

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ABSTRACT:

When the single layer of carbon atoms that form a suspended graphene sheet is observed, there are ripples on it. Furthermore, the electron beam of the transmission electron microscope often creates defects in the honeycomb graphene lattice that evolve or disappear in seconds. Both defects and ripples strongly affect the mechanical, electronic and optical properties of the material and understanding their origin and behavior is challenging. We propose and study mesoscopic models of defects as cores of dislocations and dislocation pairs in a crystalline membrane. We use related stochastic models to understand ripples and relate our results to known experiments.

TUESDAY, MAY 1, 2012
2:30 PM
Building 2, Room 105

Reception at 3:30 PM in Building 2, Room 290
(Math Dept. Common Room)

http://math.mit.edu/pms

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