

ELECTRONIC PROPERTIES OF GRAPHITIC NANOCONES

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S u m m a r y

A graphitic sheet (graphene), which is characterized in the long-wave approximation by a linear spectrum of quasiparticle excitations, represents a unique example of a really two-dimensional “relativistic” electron system. This system can manifest rather unusual properties in the presence of topological defects. We have demonstrated that a disclination that rolls up the graphitic sheet into a nanocone can be described by a pseudomagnetic vortex, the flux of which is related to the deficit angle of the cone. Analytic expressions for both the density of states and a charge of the ground state of some graphitic nanocones have been obtained.