

Abstract Submitted
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Analysis of the phase structure of graphene using lattice gauge theory YASUFUMI ARAKI, TETSUO HATSUDA, The University of Tokyo — The electrons in graphene can be described as the (2+1)- dimensional Dirac particles interacting with (3+1)-dimensional Abelian gauge field. It is suggested that the emergence of the spectral gap of graphene has intimate relation to the dynamical chiral symmetry breaking in gauge theories. We have studied the phase structure of monolayer graphene by employing the techniques of lattice gauge theory. We report our recent studies on the exciton condensate in graphene for variable temperature and coupling constant.

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