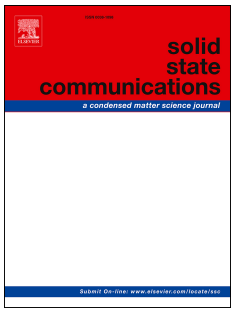
Accepted Manuscript



The effects of transverse magnetic field and local electronic interaction on thermoelectric properties of monolayer graphene

Hamed Rezania, Farshad Azizi

PII: S0038-1098(17)30389-7

DOI: 10.1016/j.ssc.2017.11.016

Reference: SSC 13329

To appear in: *Solid State Communications*

Received Date: 24 October 2017

Revised Date: 21 November 2017

Accepted Date: 26 November 2017

Please cite this article as: H. Rezania, F. Azizi, The effects of transverse magnetic field and local electronic interaction on thermoelectric properties of monolayer graphene, *Solid State Communications* (2017), doi: 10.1016/j.ssc.2017.11.016.

The effects of transverse magnetic field and local electronic interaction on thermoelectric properties of monolayer graphene

Hamed Rezania*, Farshad Azizi

Department of Physics, Razi University, Kermanshah, Iran

Abstract

We study the effects of a transverse magnetic field and electron doping on the thermoelectric properties of monolayer graphene in the context of Hubbard model at the antiferromagnetic sector. In particular, the temperature dependence of thermal conductivity and Seebeck coefficient has been investigated. Mean field approximation has been employed in order to obtain the electronic spectrum of the system in the presence of local electron-electron interaction. Our results show the peak in thermal conductivity moves to higher temperatures with increase of both chemical potential and Hubbard parameter. Moreover the increase of magnetic field leads to shift of peak in temperature dependence of thermal conductivity to higher temperatures. Finally the behavior of Seebeck coefficient

*Corresponding author. Tel./fax: +98 831 427 4556. E-mail: rezania.hamed@gmail.com