

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Angle and frequency dependence of the self-energy induced by boson fluctuation spectrum SEUNG HWAN HONG, HAN-YONG CHOI, SungKyunKwan University — We study the effects of the electron-boson coupling on the angle and frequency dependence of the self-energy. The spin susceptibility spectrum of the LSCO in superconducting state measured by the inelastic neutron scattering experiments has commensurate and incommensurate peaks. The energy scale of the self-energy induced by the commensurate peak is independent on the angle because of a small correlation length. On the other hand, that induced by the incommensurate peak depends on the angle because it has a large correlation length. The Eliashberg calculation using the measure spin fluctuation spectrum yields that the energy scale of the self-energy is larger along the anti-nodal direction than along the nodal direction. This result, however, is not consistent with the self-energy extracted from the ARPES analysis. Then we also considered the self-energy induced by Varma's loop current fluctuations. The results will be presented in comparison with the ARPES experiments.

Seung Hwan Hong
SungKyunKwan University

Date submitted: 09 Nov 2012

Electronic form version 1.4