

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Pseudo-gap in electron doped cuprates: Spin fluctuation origin and close relation with superconducting gap SEUNG RYONG PARK, Yonsei university, Korea, D.J. SONG, C.S. LEEM, CHUL KIM, S.K. CHOI, Y.K. KIM, C. KIM, K.J. CHOI, J.H. KIM, Yonsei University, K.M. SONG, Inha University, Korea, JUNG HOON HAN, Sungkyunkwan, Korea, Y. YOSHIDA, H. EISAKI, AIST, Japan — A natural candidate for the cause of PG in electron doped cuprates could be spin fluctuation. However, there has not been any careful calculation based on the spin fluctuation model, at least to our best knowledge. Recently, entire dynamic spin susceptibility of electron doped cuprate was obtained by using inelastic neutron scattering. Therefore, one could use electron-spin coupling which is proportional to the dynamic spin susceptibility and calculate the spectral function based on the electron-spin fluctuation coupling model. In this presentation, we first show calculated ARPES spectral function based on electron-spin fluctuation coupling model with the magnetic susceptibility as the input. We could identify the origin of PG as electron-spin fluctuation from this simulation, and we also could extract a rough value for the electron-spin fluctuation coupling strength g in electron doped cuprates by comparison between experimental data and simulation results.

Seung Ryong Park
Yonsei University

Date submitted: 29 Nov 2008

Electronic form version 1.4