

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Electron phonon interaction in cuprates: manifestations in spectroscopy** ANDREY MISHCHENKO, RIKEN — The ARPES and optical conductivity (OC) of cuprates is studied in the framework of the t-J-Holstein model. Both magnetic excitations of the t-J model and strong coupling to phonons are important to explain the ARPES and OC in the underdoped compounds [1]. The infrared OC of the underdoped compounds reveal the two band structure with low energy band arising due to phonon scattering and high energy peak emerging because of simultaneous emission of magnon and several phonons [2,3]. Both t-J and Holstein model fail to describe anomalous temperature dependence of ARPES whereas the t-J-Holstein model is in semi quantitative agreement with experiment [4]. Further generalization of the model to nonlocal electron-phonon couplings is considered [5]. Analysis of ARPES and OC data for larger dopings suggests fast decrease of the electron-phonon coupling strength with doping having universal dependence of the coupling strength on the in-plane hole doping concentration [2].

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Date submitted: 05 Nov 2009

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