

Mechanism of temperature dependence of RIXS spectra in charge transfer insulators

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We consider a simple model, which reflect basic properties of charge transfer insulator oxides: antiferromagnetic ground state and charge transfer excitations of Zhang-Rice singlet type. The model allows to obtain analytically various response functions [optical conductivity, X-ray absorption spectrum (XAS) and oxygen K -edge resonant inelastic X-ray scattering spectrum (RIXS)]. Mechanism of temperature dependence of these functions is elucidated. Recent experimental and numerical studies[1, 2] of edge-shared cuprates are discussed.

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- [1] C. Monney, V. Bisogni, K.-J. Zhou, R. Kraus, V. N. Strocov, G. Behr, J. Málek, R. Kuzian, S.-L. Drechsler, S. Johnston, et al., Phys. Rev. Lett. **110**, 087403 (2013).
- [2] R. Kuzian, S. Nishimoto, S.-L. Drechsler, J. Málek, S. Johnston, J. van den Brink, M. Schmitt, H. Rosner, M. Matsuda, K. Oka, et al., Phys. Rev. Lett. **109**, 117207 (2012).