

Abstract Submitted
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Calculation of RIXS spectra of cuprates using band structure parameters YIFEI SHI, ISRAEL KLICH, University of Virginia, DAVID BENJAMIN, EUGENE DEMLER, Harvard University — We explore the quasi particle theory to study the Resonant Inelastic X-ray Scattering(RIXS) by using the band structure parameters. We use both the determinant method(D. Benjamin, I. Klich and E. Demler, Phys. Rev. Lett. 112, 247002(2014)) and the expansion in the core-hole potential. The methods are applied to the $(\text{Ca}_x\text{La}_{1-x})(\text{Ba}_{1.75-x}\text{La}_{0.25+x})\text{Cu}_3\text{O}_y$, ($x=0.1$ and 0.4). We find that by using the band structure alone we can obtain quantitative agreement with the experimental data, especially for the position of the peak.

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