

Spectroscopy of $\text{La}_x\text{Sr}_{2-x}\text{MnO}_4$: cluster many-body calculations and electronic properties study of related compounds.

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We have performed many-body cluster calculations for a small cluster-model of a MnO_2 plane with apical oxygens(1). The free parameters of the model have been set fitting the energy dependence of the soft x-ray diffraction orbital ordering peaks.

The main parameters in the fit are the Jahn-Teller distortion of the oxygen octahedra, and the in-plane spin correlations. The other parameters, i.e. the Mn-O hopping and the Hubbard on-site repulsion are taken from the literature.

This model has been successfully transposed to related compounds(2,3), the electronic properties of which have been studied.

References

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- 3) J. Herrero-Martin, A. Mirone et al. *A hard X-ray probe to study doping-dependent electron redistribution and strong covalency in $\text{La}_{1-x}\text{Sr}_{1+x}\text{MnO}_4$* <http://arxiv.org/abs/0906.5474> (2009)

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