

In their manuscript "Formation of CuO<sub>2</sub> sublattices by suppression of inter-lattice correlations in tetragonal CuO" the authors investigate the tetragonal phase of the binary transition metal oxide CuO using cellular dynamical mean-field theory for finite temperatures as well as for  $T = 0$ . The main result of the paper is that the inter-sublattice hopping  $t_d$  can be treated perturbatively. The authors show that their results are in good agreement with ARPES experiments and that those systems can be seen as good candidates to be described by a single-band Hubbard model. The authors also investigate magnetic ordering, as well as superconducting properties in the system at finite temperatures.

The paper is clearly written, the calculations for  $T=0$ , as well as finite temperatures are well described and also comparisons between the two methods are shown. Some pertinent point, however, still needs some further clarification, before I am able to recommend the publication:

1. In Fig. 2 the authors show the self-energies of the onsite (a), intra-lattice hopping (b) and inter-lattice hopping (c) for zero temperature. It is well shown, that for  $T = 0$  the self-energy  $\Sigma_{t_d}$  can be neglected in comparison to the onsite and intra-lattice self-energy. Since the approximation of  $\Sigma_{t_d}$  being small is then used throughout the paper to create the so-called "block construction", also for finite temperature calculations, I ask the authors if they looked at the temperature dependence of

$$|\Sigma_{\text{loc}}[n = 0]| / |\Sigma_{t_d}[n = 0]|$$

$$|\Sigma_t[n = 0]| / |\Sigma_{t_d}[n = 0]|$$