

Abstract Submitted
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Dielectric properties of TbMnO_3 and $\text{La}(\text{Sr,Ca})_{0.3}\text{MnO}_3$ – evidence for spectral weight changes up to 20 eV. S. MÜLLER, M. RUBHAUSEN, R. RAUER, A. RUSYDI, M. BASTJAN, G. NEUBER, S. DASTJANI-FAHARANI, B. SCHULZ, S. SINGER, A. LICHTENSTEIN, Universität Hamburg, D. ARGYRIOU, Hahn-Meitner Institut, Berlin, K. DÖRR, IFW, Dresden — In order to analyze changes in the kinetic energy that occur at the transition into the magnetic state we have performed ellipsometry measurements (0.5-5.5 eV) and reflectance measurements (4 – 20 eV) covering in total a spectral range between 05 and 20 eV. First, we evaluate thermal difference reflectance spectra and find changes at the transition into the magnetic state for both undoped TbMnO_3 and doped $\text{La}(\text{SrCa})\text{MnO}_3$ exceeding energies up to 20 eV. We find distinct changes at the magnetic transitions for energies around 2 eV, 4 eV, 8 eV, 12 eV, and 18 eV. We attribute the first two transitions to Mn d-d high-spin and Op-Mnd charge transfer transitions. The transition at 18 eV is most likely connected to the O2s to O2p transition, whereas the origin of the transitions at 8 and 12 eV remain to be discussed.

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