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Core level line shape analysis of $LaCoO_3$ E. M. PAISLEY, J. STANLEY, J. HINTON, N. SUNDARAM, UC Santa Cruz, B. S. MUN, A. BOSTWICK, E. ROTENBERG, ALS, LBNL, J. F. MITCHELL, Argonne National Laboratory, D. P. BELANGER, G.-H. GWEON, UC Santa Cruz — The spin state of $LaCoO_3$ is a topic of high interest lately. Here we investigate the electronic structure of $LaCoO_3$ using core level and valence band photoemission spectroscopy. We compare the competing spin models in the literature by using our data obtained as a function of incident photon energy and temperature. Using line shape simulation of the Co 3s core level spectroscopy data and the Co 2p core level spectroscopy data, we address the issue of extracting the spin state information of the ground state from the photoemission data.

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