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Probing the magnetic structure of $Co_2Fe_xMn_{1-x}Si$ thin films by XAS/XMCD ADAM J. HAUSER, JOSHUA PHILLIPS, Department of Physics, The University of Alabama, MIHIR PENDHARKAR, SAHILL J. PATEL, CHRIS J. PALMSTROM, Materials Department, University of California-Santa Barbara, Santa Barbara, California 93106, USA — We have analyzed the magnetic configuration for highly ordered epitaxial thin films across the $Co_2Fe_xMn_{1-x}Si$ compositional series (x = 0, 0.3, 0.7, 1) by x-ray circular magnetic dichroism (XMCD) and x-ray absorption spectroscopy (XAS). These measurements give the element-specific electronic structure of each film, as well as the spin and orbital moments. We will present our observations at the Co, Mn, and Fe L-edges to explain the significant changes in intermediate stoichiometries as compared with the parent Co_2MnSi and Co_2FeSi systems.

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