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Solving magnetoelectric coupling at $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3/\text{PbZr}_{0.2}\text{Ti}_{0.8}\text{O}_3$ interfaces¹ JINLING ZHOU, West Virginia University, VU THANH TRA, National Chiao Tung University, ROBBYN TRAPPEN, DISHENG CHEN, West Virginia University, MATTHEW MARCUS, CATHERINE JENKINS, Lawrence Berkeley National Laboratory, CHARLES FRYE, EVAN WOLFE, SRINIVAS POLISETTY, West Virginia University, YINGHAO CHU, National Chiao Tung University, MIKEL HOLCOMB, West Virginia University — $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3/\text{PbZr}_{0.2}\text{Ti}_{0.8}\text{O}_3$ heterostructures exhibit interfacial magnetoelectric (ME) coupling. ME coupling is the coupling between the magnetic order and the electric order in a system, the understanding of which would lead to innovative device designs. In our talk, we will discuss our x-ray absorption spectroscopy and x-ray magnetic circular dichroism experimental results and disclose how solving polar catastrophe at the interface of this system unravels the coupling mechanism. Potentially, our results may lead to design of ME materials capable of stronger coupling.

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