

Abstract Submitted
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Pressure **induced**
spin-flop transition in multiferroic $\text{Mn}_{1-x}\text{Co}_x\text{WO}_4$ ¹ FENG YE, JINCHEN WANG, SONGXUE CHI, JAIME FERNANDEZ-BACA, Oak Ridge National Lab, M. GOOCH, BERND LORENZ, K.-C. LIANG, Y.-Q. WANG, Y.Y. SUN, C.W. CHU, University of Houston — The effect of cobalt substitution in $\text{Mn}_{1-x}\text{Co}_x\text{WO}_4$ results in the most complex multiferroic phase diagram with multiple polarization flops upon increasing Co content. Two critical concentrations occur at $x=0.075$ and $x=0.15$ that separates multiferroic phases with different spin structures and orientation of the ferroelectric polarization. For $0.075 < x < 0.15$, neutron diffraction has revealed that the spin configuration forms an *ac* spiral with associated electric polarization lying in the *ac*-plane. With application of hydrostatic pressure, we have examined the evolution of spin structure for $x=0.135$ sample. We have observed a spin-flop transition to a conical spin structure similar to that of $x>0.15$ samples. Our diffraction results are consistent with the pressure polarization measurement where a polarization flop to the *b*-axis is observed. The origin of pressure induced spin-flop transition is discussed.

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