Abstract Submitted
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Magnetoelectric Coupling in a Quantum Spin Ladder[1] JESSICA WHITE, JANICE MUSFELDT, University of Tennessee, SCOTT CROOKER, JOHN SINGLETON, ROSS MACDONALD, Los Alamos National Laboratory, CHRIS LANDEE, MARK TURNBULL, Clark University, HANS CHRISTEN, Oak Ridge National Laboratory — We investigated the optical properties and magnetization of (2,3-dmpyH)$_2$CuBr$_4$, an antiferromagnetic quantum spin ladder with strong rail interactions. It is similar to the copper oxides, yet its modest exchange interactions allows it to be saturated at 29 T, whereas copper oxides require a much higher field. In the end, we were able to see that the field dependent integrated absorption difference tracks the magnetization, demonstrating that the structure is sensitive to the ferromagnetic transition.

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