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Magnetic neutron scattering of a Prussian blue analogue photomagnet[1] D.M. PAJEROWSKI, Dept. Phys. and NHMFL, Univ. Florida and NCNR-NIST, E.S. KNOWLES, Y.M. CALM, M.W. MEISEL, Dept. Phys. and NHMFL, Univ. Florida, M.J. ANDRUS, J.E. GARDNER, D.R. TALHAM, Dept. Chem., Univ. Florida, V.O. GARLEA, S.E. NAGLER, NSSD-ORNL — Since the discovery of photoinduced magnetism in cobalt hexacyanoferrate (CoFe) Prussian blue analogues (PBAs) in 1996,[1] there have been many, multifarious studies that elucidated the nature of the photoeffect. However, the magnetization in CoFe has proven difficult to model quantitatively using macroscopic data due to the presence of multiple magnetic species, magnetic bistability, superexchange, and unquenched orbital angular momentum. To investigate the ordered magnetization directly, we have studied dueterated powders of CoFe using unpolarized and polarized neutron diffraction, and observed magnetic neutron scattering for the first time in this compound. A model for the magnetic structure based upon neutron diffraction, elemental analysis, infrared spectroscopy, and macroscopic magnetization will be presented.
[1] O. Sato, et al., Science 272, 704 (1996).

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