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Spiral structure of a frustrated spinel $CdCr_2O_4$ studied by polarized neutron techniques M. MATSUDA, Japan Atomic Energy Agency (JAEA), A. OOSAWA, JAEA, M. TAKEDA, JAEA, M. NAKAMURA, JAEA, E. LELIEVRE-BERNA, ILL, K. KAKURAI, JAEA, J.-H. CHUNG, NIST, S.-H. LEE, Univ. of Virginia, H. UEDA, Univ. of Tokyo, H. TAKAGI, RIKEN — $CdCr_2O_4$ has the spinel structure, in which geometrical frustration exists between the Cr^{3+} moments located at the corners of the tetrahedron. This compound shows a transition to a spiral magnetic structure with a characteristic wave vector of $Q = (0, \delta, 1)$ ($\delta \sim 0.09$) at 7.8 K, which is accompanied by a tetragonal structural distortion with the c axis elongated. [1] We first performed a 1D polarized neutron analysis and determined that the Cr^{3+} moments has a planer anisotropy in the ac plane. Finally, spherical neutron polarimetry experiments were performed using a CRYOPAD on TAS-1 at JRR-3. It is found that the spiral structure is elliptical with the spin component $\sim$24% elongated along the c axis. [1] J.-H. Chung *et al.*, Phys. Rev. Lett. 95, 247204 (2005).

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