

Abstract Submitted  
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**Magnetoelectric coupling in a triangular lattice antiferromagnet CuCrO<sub>2</sub>** KENTA KIMURA, HIROYUKI NAKAMURA, Osaka University, KENYA OHGUSHI, Institute for Solid State Physics, University of Tokyo, TSUYOSHI KIMURA, Osaka University — A triangular lattice antiferromagnet CuCrO<sub>2</sub> shows an out-of-plane 120° spin structure. Recently, ferroelectricity in the 120° phase has been reported for polycrystalline samples. However, no anisotropic information (e.g. direction of polarization) has been provided for lack of single-crystal measurement [1]. Therefore, we grew single crystals of CuCrO<sub>2</sub> and investigated their magnetic and ferroelectric properties [2]. We found that CuCrO<sub>2</sub> undergoes two successive magnetic phase transitions ( $T_{N2} \approx 24.2$  K and  $T_{N1} \approx 23.6$  K), probably into a collinear antiferromagnetic phase and then the out-of-plane 120° phase. Ferroelectric polarization within the triangular lattice plane appears only in the 120° phase. In the talk, we also discuss the magnetoelectric properties. [1] S. Seki et al., *Phys. Rev. Lett.* **101**, 067204 (2008). [2] K. Kimura et al., *Phys. Rev. B* **78**, 140401(R) (2008).

Kenta Kimura  
Osaka University

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