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Electric Control of the Local Magnetic Moment in Multiferroic Compound Ba2CoGe2O7 TAKATSUGU MASUDA, The University of Tokyo — $Ba_2CoGe_2O_7$ is a multiferroics exhibiting a collinear antiferromagnetic structure with the easy axis along <100> and an antiferroelectric one with the electric polarization along [001] at $T \leq 6.7$ K. For a local CoO_4 tetrahedron, the relation between the polarization **p** and the magnetic moment **S** is explained by spin-dependent d - p hybridization mechanism. In previous study we reported that a spin-nematic interaction was responsible for the magnetic anisotropy and the structure of the polarization[1]. In the present study we report a neutron diffraction in the electric field to demonstrate the electric control of the magnetic moment. With the increase of the field along [001] the magnetic intensities at $Q = (h,\ k,\ 0)$ with $h > 0$ and $k > 0$ decrease, and in contrast, those with $h > 0$ and $k < 0$ increase. Combination of the results, the relation between **p** and **S**, and the assumption that the **p**-direction does not deviate from [001] leads to the constraint that the moment is confined in (001) plane. The electric field dependence of the Bragg intensities is explained by the model that the direction of the magnetic moment continuously rotates from <100> to <110>. [1] M. Soda, et al., PRL **112**, 127205 (2014).

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