Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Directional dichroism in $Co_3B_7O_{13}I$ NOBUYUKI ABE, NAOKI WATANABE, SHINGO TOYODA, TAKA-HISA ARIMA, University of Tokyo, NGUEN KHANH, MITSURU SAITO, SHOJIRO KIMURA, Tohoku University
— Directional dichroism in a well-known magnetoelectric multiferroic boracite $Co_3B_7O_{13}I$ has been investigated. In the ferroelectric and weak ferromagnetic phase below 37K, we have found that the optical absorption of intra *d-d* transitions at Co^{2+} exhibits a fairly large directional dichroism, which shows up as a change in absorption by the application of a magnetic field in Voigt configuration. Magnetic-field dependence of the optical absorption shows a hysteresis like the magnetization curve, which indicates that the change in optical absorption should originate from the rotation of the magnetic moments of Co^{2+}.

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Date submitted: 12 Nov 2014 Electronic form version 1.4