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**Pressure-induced Polarization Reversal in Z-type Hexaferrite Single Crystal** BYUNG-GU JEON, SAE HWAN CHUN, KEE HOON KIM, CeNSCMR, Seoul National University — Multiferroic materials with a gigantic magnetoelectric (ME) coupling at room temperature have been searched for applications to novel devices. Recently, large direct and converse ME effects were realized at room temperature in the so-called Z-type hexaferrite $(Ba,Sr)_3Co_2Fe_{24}O_{41}$ single crystals [1,2]. To obtain a new control parameter for realizing a sensitive ME tuning, we studied ME properties of the crystals under uniaxial pressure. Upon applying a tiny uniaxial pressure of about 0.6 GPa, magnetic field-driven electric polarization reversal and anomaly in a $M-H$ loop start to appear at 10 K and gradually disappear at higher temperature above 130 K. By comparing those results with longitudinal magnetostriction at ambient pressure, we propose the pressure-dependent variations of transverse conical spin configuration as well as its domain structure under small magnetic field bias, and point out the possibility of having two different physical origins of the ME coupling in this system. [1] Y. Kitagawa *et al.*, Nat. Mater. **9**, 797 (2010) [2] S. H. Chun *et al.*, submitted.

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