

Abstract Submitted
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Spin-driven ferroelectricity in triangular lattice antiferromagnets $A\text{CrO}_2$ ($A = \text{Cu, Ag, Li, or Na}$) SHINICHIRO SEKI, YOSHINORI ONOSE, YOSHINORI TOKURA, Department of Applied Physics, University of Tokyo — The correlation between the dielectric and magnetic properties is investigated on the triangular-lattice antiferromagnets $A\text{CrO}_2$ ($A = \text{Cu, Ag, Li, or Na}$) with the 120-degree spiral spin structure. For the $A = \text{Cu}$ and Ag compounds with delafossite structure, the ferroelectric polarization emerges with the spiral spin order, implying the strong coupling between the ferroelectricity and the spiral spin structure. For the $A = \text{Li}$ and Na compounds with ordered rock salt structure, on the other hand, no spontaneous polarization is discerned, while the clear anomaly in dielectric constant can be observed upon the transition to the spiral-spin ordered state. This feature can be ascribed to the possible antiferroelectric state induced by the alternate stacking of the Cr-spin sheet with opposite vector spin chirality.

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