



Contribution ID: 184

Type: **Invited talk**

## **Symmetry breakings and resulting magnetic, electric, and optical properties in ferroic materials**

*Wednesday, 16 March 2022 11:00 (1 hour)*

We discuss symmetry-dependent magnetic, electric, and optical phenomena characteristic of materials with unconventional ferroic orders such as ferro-toroidal, ferro-axial, and ferro-quadrupole orders. The phenomena include magnetoelectric effect, nonreciprocal directional dichroism, and electrogyration. Furthermore, we show ways to spatially visualize domain structures in such unconventional ferroic materials.

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**Session Classification:** Plenary Talk

**Track Classification:** Main conference: Solid State Physics and Crystal Physics