

Abstract Submitted
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Long-period solitonic lattice in the rare earth orthoferrite TbFeO₃ NIELS JENSEN, Riso National Laboratory, Roskilde, Denmark, SERGEY ARTYUKHIN, University of Groningen, ANDREY MALJUK, Helmholtz-Zentrum Berlin, KIM LEFMAN, University of Copenhagen, MAXIM MOSTOVOY, University of Groningen, DIMITRI ARGYRIOU, European Spallation Source ESS AB — Rare earth orthoferrites show a variety of magnetic transitions and spectacular magneto-electric effects originating from the coupling between the iron and rare earth magnetic sublattices. Our recent single-crystal neutron diffraction measurements revealed the presence of an unusual incommensurate phase in TbFeO₃, which is induced by the magnetic field along the *c* axis and has a period of about 100 unit cells. We also present the results of model calculations, which explain the origin of this novel phase and reproduce the magnetic phase diagram of TbFeO₃.

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