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Spin-reorientation transitions in Er, Tm and Yb orthoferrites: magnetic and structural properties. YA. B. BAZALIY, Leiden University, The Netherlands; University of South Carolina, Columbia, SC, USA; Institute of Magnetism, Kyiv, Ukraine, L. T. TSYMBAL, V. N. DERKACHENKO, V. I. KAMENEV, O.Galkin Donetsk Physics and Technology Institute, National Academy of Science, Donetsk, Ukraine, G. N. KAKAZEI, Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain; Institute of Magnetism, National Academy of Science, Kyiv, Ukraine., F. J. PALOMARES, Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain., P. E. WIGEN, Ohio State University, Columbus OH, USA. — Magnetic and structural characteristics of $ErFeO_3$, $TmFeO_3$ and $YbFeO_3$ single crystals were studied over a wide temperature range. Magnetic measurements found that the spin-rotation transitions in all crystals are well described by the earlier proposed theory with no fitting parameters. Additionally, they have shown the absence of the magnetic compensation point in $TmFeO_3$, and a noticeable growth of the c-axis magnetization at low temperatures in $TmFeO_3$ and $ErFeO_3$. The X-ray measurements found no symmetry-lowering lattice distortions during the reorientation. Overall, the measurements cover a wide range of material parameters and demonstrate the generality of the modified mean field theory of the $\Gamma_4 \rightarrow \Gamma_{24} \rightarrow \Gamma_2$ orientation phase transitions in orthoferrites. // L. T. Tsymbal *et al.*, J. Appl. Phys **101**, 123919 (2007).

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