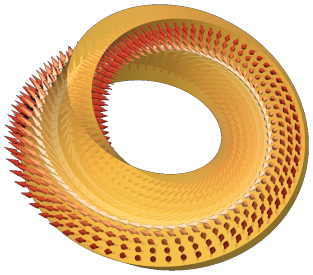

Contribution ID: **29** Type: **Invited talk**

Flexomagnetic response of multiferroics

Thursday, 23 May 2019 16:45 (30 minutes)

Using direct matrix method we established the structure, including the number of nonzero and independent elements, of the poorly studied flexomagnetic coupling tensor for all 90 magnetic classes. We used the point symmetry of the unit cell, its magnetic symmetry, previously known permutation symmetry, as well as we establish previously unexplored permutation symmetry of the flexomagnetic tensor. For several symmetries, which correspond to the most important for applications multiferroics with nonzero flexomagnetic effect, such as $BiRFeO_3$ ($R = La, Pr, Eu$), $Sr_{1-x}Ba_xMnO_3$, $LiMPO_4$ ($M = Fe, Co, Ni$), $TbMn_2O_5$, $YMnO_3$, $InMnO_3$ and $RMn_{1-x}Ga_xO_3$ ($R = Ho, Y$), we visualize the effective flexomagnetic response of the bended magnetoelectric plate, analyze its anisotropy and angular dependences. We discuss how the established symmetry can simplify the problem of the flexomagnetic constants determination from experiments, opening the way for its novel applications.

Primary authors: Prof. MOROZOVSKA, Anna (Institute of Physics, National Academy of Sciences of Ukraine); Prof. ELISEEV, Eugene (Institute for Problems of Materials Science, National Academy of Sciences of Ukraine)

Presenter: Prof. MOROZOVSKA, Anna (Institute of Physics, National Academy of Sciences of Ukraine)