

Micromagnetism at IEE SAS

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In this seminar, I will give a short introduction to the topic of micromagnetism. First, I will mention the typical problems associated with this topic that we solved at our institute - IEE SAS. Then, I will give a short introduction to the physical model of micromagnetism. Finally, I will come to the main topic of the seminar - a phenomenon we observed in numerical simulations - the dynamical breaking of symmetry in magnetic systems. Along the micromagnetism, I will also mention the metadynamics algorithm, which is a variant of optimization methods that can also be used in other areas of computer simulations.

References:

- [1] J.Tóvik: Dynamical symmetry breaking in magnetic systems, *Physica status solidi (RRL)*, 2023.
- [2] J.Tóvik, R.Martoňák, V.Cambel: Free-energy landscapes in magnetic systems from metadynamics, *Physical Review B* 96, 140413, 2017.