

Nonstandard Winter Day 2023

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Title: **Absence of Lavrentiev's phenomenon and Musielak-Orlicz-Sobolev spaces**

Abstract: We want to study Lavrentiev's phenomenon for a broad class of variational functionals, covering anisotropic functionals of non-standard growth. To this purpose, we define Musielak–Orlicz–Sobolev spaces and describe how the density of regular functions guarantees the absence of Lavrentiev's phenomenon for admissible functionals. One can achieve density by imposing particular growth conditions on the function defining the space. We present general conditions, embracing and improving known results in special cases, simultaneously allowing for the anisotropy of considered problems.

The talk is based on joint work with Iwona Chlebicka and Błażej Miasojedow.