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Convolutional neural networks for neutron tomography

Neutron tomography is a powerful tool in the field of materials science, geology, and archaeology. Due to the special properties of the interaction of neutrons with matter, neutron tomography complements the results of X-ray tomography. However, neutron tomography has a number of significant drawbacks: the long duration of the experiment, low spatial resolution, and inefficient data processing tools. New mathematical algorithms are needed to solve these problems. One of these is a convolutional neural network. This algorithm is adapted to work with images, which corresponds to the tasks of neutron tomography. This work presents the results of using convolutional neural networks to solve the challenges of neutron tomography.

Summary

Presenter: БАКИРОВ, Булат (FLNP JINR)

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