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Minimal setup for neutron background measurements - summary of the BSUIN project

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The BSUIN project conducted pilot measurements to test methods for characterizing underground laboratories for natural background radioactivity (NRB). One of the components of NRB that requires specific measurement methods is the neutron background.

The goal of our team was to develop a reference setup for neutron background measurements.

Our idea was to build a setup for measuring neutrons as simple as possible, but not simpler. The price and universality of the measurement setup are important parameters, but the reliability of the result is also very important. It is because the neutron flux in underground laboratories is usually very low and it is easy to make a mistake in interpreting of the results.

The basics of our method will be presented, as well as the assessment of possible measurement errors and the transactional experience gained during measurements at six different locations in four mines.