Contribution ID: **465** Type: **Poster**

# Characterization of natural radioactivity in the BSUIN and EUL underground laboratories based on the developed standard scheme

*Friday 16 July 2021 19:18 (12 minutes)*

Underground laboratories (ULs) are now becoming more and more popular, not only for scientific reasons. However, they are still very important as potential dark matter search sites. Therefore, the idea was born to create a network of underground laboratories operating in the Baltic Sea region. The result was the BSUIN (Baltic Sea Underground Innovation Network) project and its current continuation in the EUL (Empowering Underground Laboratories Network Usage) project. One of the most critical parameters in characterizing the ULs is the natural background radiation (NBR), mainly from surrounding bedrock and used construction materials. To this end, a standard scheme was created containing the NBR measurement results to characterize selected ULs participating in the BSUIN project. The developed scheme allows for an easy and transparent comparison of underground places (halls/rooms) in terms of the conditions prevailing there, not only in one UL but also between equal ULs. In this way, a potential client can choose the most convenient place to conduct his research or other types of tasks. This scheme is still supplemented with new measurement results and applied to other underground locations as one of the EUL project activities.

The scheme includes the results of in-situ measurements (gamma-ray, the radon concentration in air, thermal neutron flux measurements) and the results of laboratory measurements of rock and water samples taken from the studied locations. During the session, this scheme will be presented on the example of one of the ULs participating in the BSUIN and EUL projects.

## Keywords

underground laboratory, natural background radiation

## Collaboration

## other Collaboration

## Subcategory

Experimental Results

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**Session Classification:** Discussion

**Track Classification:** Scientific Field: DM | Dark Matter