

Underground Muography with Portable Gaseous Detectors

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Muography is a novel imaging technology to reveal density structure of hill-sized objects. The cosmic muons lose slowly their energy and penetrate hundreds of meters into the ground, thus their differential local flux correlates with the density-length they traveled through.

Exploiting the high flux around the zenith the imaging of the internal structure of hills could be done underground. Various fields could benefit from this non-invasive imaging, eg. speleology, mining, and cultural heritage targets.

The main challenges are the portability, low power consumption, and robustness against the out-of-the-laboratory environment.

Portable gaseous tracking detector system has been designed and built, and successfully used in several underground locations.

The presentation will focus on the designed portable tracking system, the main requirements, and measurement campaigns for calibration, natural caves, and cultural heritage.

TIPP2020 abstract resubmission?

Yes, this would have been presented at TIPP2020.

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