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The development of a mobile detector for measurements of the atmospheric muon flux, using different detection techniques

A mobile muon detector has been developed to measure cosmic ray muon flux at surface and in underground at different observation levels of Romania. The detector consists of 2 scintillator plates (1 mˆ2 surface) operated in coincidence. The system is installed on a van car, which gives a high mobility of the detector. Measurements of muon flux at surface and in the underground of Slanic Prahova salt mine have been performed. In this salt mine an underground low - radiation level laboratory has been set-up and the measurements served as testing the underground signals to characterize the mine in comparisons to other possible underground labs. Recently, the detector has been improved by replacing the classic scintillators with new ones using optical fibres and PMTs. Some tests regarding the use of MPPC (Multi-Pixel Photon Counter) photodiodes instead PMTs has been also performed.

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