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A new multilevel experiment MUG for observing muon fluxes underground

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Abstract. We describe a new Muons UnderGround experiment (MUG) for observing muon uxes underground. The experiment is situated in the Pyhasalmi zinc mine in Central Finland. The muon detectors consist of two vertically overlapping plastic scintillators. Six pairs of detectors are located 210 metres underground, another six pairs 90 metres underground, and three pairs are on the ground level.

The dimensions of the scintillators are 50 cm $\times$ 50 cm in the horizontal plane and their thickness is 5 cm. Each scintillator is equipped with a Hamamatsu R329-02 photomultiplier tube with fast time response.

In the preliminary phase of the experiment the counting rates of coincidences of the scintillator pairs are recorded. In this paper we describe the detectors and the experimental set-up in more detail.