

NEW UNDERGROUND LABORATORY IN THE PYHÄSALMI MINE (CALLIOLAB) AND PLANS FOR THE FUTURE SCIENTIFIC ACTIVITIES

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CallioLab is located in the Pyhäsalmi Mine, in central Finland. The Pyhäsalmi Mine is a copper, zinc and pyrite mine being the deepest active metal mine in Europe with the main level at 1410 meters. The infrastructure is excellent offering two accesses by an elevator in 3 minutes or by a car 11-km long truck-sizes drive-way. There are among others, office rooms, storage halls, repairs workshops for mechanical and electrical instruments, and a lunch restaurant which can be used for meetings of several tens of participants.

To make use of the infrastructure after the end of underground mining operations the plans for establishing a Science and Research Centre in the mine have started realizing. Different international studies and reports have proven that the Pyhäsalmi Mine area is an excellent site for underground physics experiments from both technical, infrastructural and scientific point of view [1]. This feasibility has been shown, for example, by the extended site investigations at Pyhäsalmi Mine [2] which included, among others, analyses of the structural, physical and chemical conditions of the rock mass. Water analysis have also been done [3].

The facilities of the mine are excellent, for example, for various kind of physics experiments due to the large rock overburden, but also for other fields of science. Therefore, first round of an open call process was organized during 2015 and there is a new round during 2016, in which new experiments will be looked for to utilize the underground facilities. In the present work we present a new underground laboratory, CallioLab, and plans for the future activities in the Pyhäsalmi Mine.

[1] M. Wurm et al., *Astroparticle Physics* 35, 685, (2012)

[2] Kalliosuunnittelu Oy Rockplan Ltd, *Extended Site Investigations at Pyhäsalmi Mine, Finland*

[3] H. Miettinen et al., *Frontiers in Microbiology*, 6, 1203, (2015)