

Possibilities for Underground Physics in the Pyhäsalmi Mine

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The underground mining in the Pyhäsalmi mine, Finland, is coming to an end in approximately 18 months after nearly 60 years of operation. The infrastructure of the mine is in excellent condition, including 1400-metre long vertical elevator shaft and 11-km long truck-size decline for transportation, large underground storage and service halls, offices, restaurant and modern communication services.

An organization called Callio has been founded (<https://callio.info>) to maintain and operate the underground premises after the closure of the mine. There exists currently one dedicated laboratory hall (Lab2) for physics experiments at the deepest location of the mine. The overburden of 4100 mwe offers great possibilities for physics experiments requiring maximum shielding from cosmic muons. New excavations are possible.

Currently there are two physics experiments running in the mine. EMMA is studying the composition of cosmic rays at the knee region. The array of 11 stations is situated at the depth of 75 m. The C14 experiment is situated in the laboratory hall Lab2. It is a small-size low-background set-up to map the concentration of carbon-14 in liquid scintillators.

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