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To Callio Lab and beyond –update on the deep underground research centre in Finland.

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Underground physics has been conducted at the Pyhäsalmi mine in Finland for over 20 years and it was one of the sites in FP7 LAGUNA and LAGUNA LBNO design studies. In 2016, the University of Oulu established the Callio Lab multidisciplinary research centre, which began coordinating scientific activities on-site. Since then, we have hosted and conducted research in disciplines ranging from particle physics and geosciences to underground food production and remote sensing. The operating environment would also suit studies in circular economy and space and planetary sciences, which are being explored by the Callio SpaceLab initiative.

Underground mining ended in 2022 and repurposing of the mine into a pumped hydro energy storage by the Pyhäjärvi town-owned CALLIO - Mine for Business concept will begin. This ensures the underground environment will remain accessible to science and R&D. Together with the easy tunnel and elevator access, low seismicity, which has been observed to decrease dramatically since the conclusion of underground extraction, and the flat 1.4 km overburden (~4000 m.w.e.) the site is a potential candidate for future physics experiments.

Callio Lab is a founding member of the European Underground Laboratories Association, a member of the DULIA network, and an EPOS and national FIN-EPOS research infrastructure.

[1] Joutsenvaara, J. et al. Callio Lab –the deep underground research centre in Finland, Europe J. Phys.: Conf. Ser. 2156 (2022) 012166.

Submitted on behalf of a Collaboration?

No

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