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LNGS-FUTURE: upgrading LNGS facility for the science challenges in the upcoming decades

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Laboratori Nazionali del Gran Sasso (LNGS) of INFN are one of the most important research centers for astroparticle physics. Since the late 1980s, the role, results and international impact of LNGS have been constantly growing. Every year over a thousand scientists, from the most renowned universities and research institutions in the world, come to LNGS to participate in experiments.

The study of the properties of neutrinos, the search for dark matter and the understanding of the mechanisms underlying the functioning of stars are the main strands of the articulated LNGS research program. Thanks to their size, ease of access and geographical location, LNGS are the ideal place to carry out complex experiments. The success of LNGS is closely linked to the ability to provide integrated services and scientific support of excellence in the fields of mechanics, electronics, the selection of radio-pure materials, analytical chemistry and scientific computing.

To keep LNGS in step with international competition, constant improvement is required. The LNGS FUTURE project aims at the modernization and strengthening of the laboratory's technical and safety services and at the creation of support for advanced cryogenics, a technique increasingly used by new generation experiments. The ultimate goal is to host the most sensitive experiments designed to study relevant topics in astroparticle physics, nuclear astrophysics, and cosmology.

Submitted on behalf of a Collaboration?

No

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