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Nuclear Astrophysics deep underground

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Cross sections of nuclear reactions relevant for astrophysics are crucial ingredients to understand the energy generation inside stars and the element nucleosynthesis. At astrophysical energies, nuclear cross sections are often too small to be measured in laboratories on the Earth ' s surface, where the signal would be overwhelmed by the cosmic-ray induced background.
The Laboratory for Underground Nuclear Astrophysics (LUNA) is placed under the Gran Sasso mountains (Italy). The extremely low background achieved at LUNA allows to perform uniquely sensitive experiments.
Over the years, many crucial reactions involved in stellar hydrogen burning as well as big bang nucleosynthesis have been measured at astrophysical energies.
An overview of the latest results and future perspectives of the LUNA experiment will be given.

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