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Nuclear Astrophysics at Gran Sasso

Friday, 8 May 2015 10:30 (45 minutes)

The understanding of the processes that power stars and that produce and continue to produce (almost) all elements in the universe is the subject matter of the field of Nuclear Astrophysics. In part this involves measuring in a laboratory the extremely small cross sections of stellar nuclear reactions. Due to the very low expected event rate reduction of the natural background level is of major importance.
For over 20 years, the experiments LUNA and LUNA-II at the LNGS have exploited the background reduction provided by the underground location to measure critical reactions at energies directly inside the relevant stellar energy range. I will present an overview over nuclear astrophysics and connect the general subject to the past, present and future activities of LUNA at LNGS.

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