**Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati**

Avviso di Seminario Generale

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Edinburgh Univ.

**Direct Measurements of Stellar Reactions: Progress and Prospects from LUNA**

Nuclear reactions in stars are responsible for the synthesis of nearly all elements beyond primordial hydrogen and helium. These reactions occur at extremely low energies and have cross sections that are difficult to measure directly in laboratory conditions due to natural and cosmic-ray-induced background. As a result, many reaction rates relevant to stellar evolution and nucleosynthesis rely on uncertain extrapolations, limiting the predictive power of astrophysical models.

The Laboratory for Underground Nuclear Astrophysics (LUNA), located beneath 1.4 km of rock at the Gran Sasso National Laboratory in Italy, offers a unique environment for measuring these reactions at the relevant astrophysical energies. By dramatically suppressing background radiation, LUNA has enabled direct studies of key processes that power stars and shape the chemical evolution of the Universe. In this talk, I will review selected results from LUNA’s low energy experiments and discuss their implications for astrophysics. I will also highlight current challenges and open questions, outlining prospects for future experimental efforts and collaborative research.

## Svolgimento Seminario

## Mercoledi’ 4/6 ore 14:00 Aula Salvini

https://agenda.infn.it/event/46825/

L'invito è esteso a tutto il personale interessato, che è caldamente invitato a partecipare.