

Direct measurements of cross section of astrophysical interest and their impact on stellar modeling

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Refreshments at 3:30 P.M. in 202 NSH

New direct experimental methods and techniques, combined with the development of new theoretical tools have opened new avenues to explore nuclear reactions of significance for nucleosynthesis at or near the actual temperatures of stellar burning. The main difficulty of direct measurements is determined by the background, which, together with the low cross sections, set a limit on the energy range that can be investigated with a simple setup on the earth's surface.

The best solution so far was to install an accelerator facility in a deep underground laboratory, in a similar way to solar neutrino detectors. The most important results collected in the framework of LUNA (Laboratory for Underground Nuclear Astrophysics) project and their impact on stellar evolution and nucleosynthesis modeling will be reviewed.