

# NUCLEAR COOKIES SEMINARS

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**h. 11:00 Aula R**

## **New experimental approaches for nuclear astrophysics**

Heavy chemical elements are created during several nucleosynthesis processes acting at different stellar sites. The detailed description of these processes is an interdisciplinary challenge and requires input from different fields of physics. A substantial part is played by nuclear physics, as it is responsible for the quantitative description of nuclear reactions happening at these stellar sites. This mainly involves neutron capture, as well as proton capture cross sections, which are based on a fundamental understanding of the properties of the involved nuclei.

As such, nuclear experiments are key to address open questions and to actually measure these properties. This, in turn, enables theory to further develop methods and models.

In this talk, I will present recently developed experimental approaches relevant for nuclear astrophysics using e.g. g-ray spectroscopy with advanced high-resolution arrays like GRETINA, as well as employing direct reaction studies in heavy-ion storage rings. These techniques are highly promising for future measurements, especially also for newly discovered astrophysical processes like the i-process.

Daniele Mengoni - Marco Mazzocco - José Javier Valiente Dobón - **Jesús Casal**



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