

## Neutron-capture processes revealed by dwarf galaxies

*Friday 13 June 2025 09:00 (30 minutes)*

The Milky Way is an environment rich with satellite galaxies, stellar streams and accreted systems. Looking at detailed chemical abundance patterns of individual stars in these systems allows us to trace back different nucleosynthetic sources, such as the slow (s), intermediate (i) and rapid (r) neutron-processes. Recent observations of these systems suggest that the i-process might have been more important at low metallicities, compared to higher metallicities. With spectroscopic observations of individual stars in the Milky Way and the dwarf galaxy satellites, it becomes clear that (at least) two distinct r-process sites are needed to explain the data: a quick source with timescales comparable to core-collapse supernovae, and a delayed source with characteristic timescales of a few  $\sim$ Gyr, most probably originating in neutron star mergers. In this talk I will go over the data and the arguments leading to these results and show that only by looking at all the available data in many galaxies will we be able to solve the puzzle that is the neutron-capture processes.

**Author:** SKÚLADÓTTIR, Ása (Department of Physics and Astronomy, University of Florence)

**Presenter:** SKÚLADÓTTIR, Ása (Department of Physics and Astronomy, University of Florence)