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The abundance of s-process elements: temporal and spatial trends from open cluster observations

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Spectroscopic observations of stars belonging to open clusters, with well-determined ages and distances, are a unique tool for constraining stellar evolution, nucleosynthesis, mixing processes, and ultimately galactic chemical evolution. Abundances of slow (s) process neutron capture elements in stars that retain their initial surface composition open a window into the processes that generated them. In particular, they give us information on their main site of production, i.e. the low- and intermediate-mass Asymptotic Giant Branch (AGB) stars.

In this contribution, I will review some observational results obtained during the last decade that contributed to a better understanding of the AGB phase: the growth of s-process abundances at recent epochs, i.e., in the youngest stellar populations; the different relations between age and $[s/Fe]$ in distinct regions of the disc; and finally the use of s-process abundances combined with those of α elements, $[s/\alpha]$, to estimate stellar ages.

I will revise some implications that these observations had both on stellar and Galactic evolution, and our ability to infer stellar ages.

Session

Stellar observations (photometry and spectrometry)

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