Contribution ID: **70**   Type: **Oral Presentation**

A statistical exploration of CEMP star classification with s-process models

Increasingly larger databases of observed stellar abundances of heavy elements beyond iron present an opportunity to apply a statistical machine learning approach to the traditional comparison between models and observations. In this work we will present our results on CEMP stars. Our aim is to provide an automatic and unbiased process to group these stars in relation to their s-process abundances, which allows us to identify trends in the observations as well as those elements that have a higher impact on the classification. This analysis is done by systematically comparing a database of 650 low-metallicity stars with low-metallicity Asymptotic Giant Branch stellar models from FRUITY (Cristallo et al. 2016) and Monash (Amanda Karakas, private communication). From the comparison we calculate a set of Goodness of Fit (GoF) metrics, and we classify the observational samples based on the same metrics. The impact of single elements or of a group of elements on the classification is measured and taken into account. The obtained classifications are discussed, in comparison with previous results.

Length of presentation requested

Oral presentation: 17 min + 3 min questions

Please select between one and three keywords related to your abstract

Nucleosynthesis

2nd keyword (optional)

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Primary author: YAGÜE LÓPEZ, Andrés

Co-authors: Dr PLACCO, Vinicius (NOIRLab); PIGNATARI, Marco (Hull University); DEN HARTOGH, Jacqueline (Keele University)

Presenter: YAGÜE LÓPEZ, Andrés