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The intermediate neutron capture process in AGB stars

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The origin of trans-iron elements is not yet fully understood. In addition to the slow (s) and rapid (r) neutron capture processes, an intermediate neutron capture process (i-process) is thought to exist at neutron densities intermediate between the s- and r-processes. The chemical composition of the so-called r/s-stars support the existence of this process but the astrophysical site(s) hosting the i-process is (are) actively debated. The early asymptotic giant branch (AGB) phase of low-mass stars is a promising site. In this talk, I will focus on the development of the i-process in AGB stellar models of various masses and metallicities computed with the stellar evolution code STAREVOL. In particular, new results on the impact of overshooting and nuclear uncertainties will be discussed. The unique chemical fingerprint of these stars will also be presented and confronted with observations.

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