Nuclear Physics in Astrophysics XI



Contribution ID: 72

Type: Invited talk

The intermediate neutron capture process in AGB stars

Monday 16 September 2024 09:55 (25 minutes)

Despite considerable progresses during the last decades, the origin of the elements heavier than iron 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 astrophysical site(s) hosting the i-process is (are) actively debated. After reviewing the current status of the i-process, I will focus on the development of the i-process in asymptotic giant branch (AGB) stellar models, computed with the stellar evolution code STAREVOL. I will highlight the unique chemical fingerprint of the i-process, identify key reaction rates and compare model predictions with observations of chemically peculiar stars.

Primary author: CHOPLIN, Arthur (Université Libre de Bruxelles)

Co-authors: SIESS, Lionel (Université Libre de Bruxelles); GORIELY, Stephane (Université Libre de Bruxelles); MARTINET, Sébastien (Université Libre de Bruxelles)

Presenter: CHOPLIN, Arthur (Université Libre de Bruxelles)

Session Classification: Plenary Session