

Nucleosynthesis in extremely metal-poor intermediate-mass stars

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The increasing number of metal-poor stars observed to date has raised numerous questions concerning the elemental production in the early stages of our Galaxy. Theoretical studies have shown that extremely metal-poor (EMP) low- and intermediate-mass stars undergo extra mixing processes (proton ingestion episode-PIE) that leads to the production of large amounts of neutron in the early stages of the He-flash or the TP-AGB phase. In this work we explore the nucleosynthesis during the PIE of intermediate-mass stars, including the production of s-process elements. We have performed models of stars with $M < 3.0 M_{\text{sun}}$ and $Z < 10^{-7}$. Our models show that a significant amount of s-process elements are produced by EMP stars during the PIE. Moreover, this production is strongly dependent on the duration of this phenomenon.