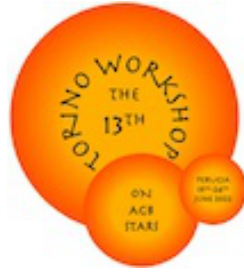


The 13th Torino Workshop on AGB stars & the 3rd Perugia Workshop on Nuclear Astrophysics



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Extremely Metal-Poor Asymptotic Giant Branch Stars

Tuesday, 21 June 2022 16:25 (25 minutes)

Little is known about the first stars, but hints on this stellar population can be derived from the peculiar chemical composition of the most metal-poor objects in the Milky Way and in resolved stellar populations of nearby galaxies. We review the evolution and nucleosynthesis of metal-poor and extremely metal-poor (EMP) stars with low and intermediate masses. In particular, new models of $6 M_{\odot}$ with three different levels of metallicity, namely $Z=10^{-4}$, 10^{-6} and 10^{-10} , are presented. In addition, we illustrate the results obtained for a $2 M_{\odot}$ $Z=10^{-5}$ model. All these models have been computed by means of the latest version of the FuNS code. We adopted a fully coupled scheme of solutions for the complete set of differential equations describing the evolution of the physical structure and the chemical abundances, as modified by nuclear processes and convective mixing. The scarcity of CNO in the material from which these stars formed significantly affects their evolution, their final fate and their contribution to the chemical pollution of the ISM in primordial galaxies.

Session

Stellar evolution

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