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AGB stars evolution and nucleosynthesis

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AGB stars are the nuclear production phase of low- and intermediate mass stars. The double-shell burning of He and H around the electron degenerate core drives a rich pattern of nucleosynthesis, including the slow neutron capture process, as well as the formation of neutron rich isotopes. This nucleosynthesis is now observationally accessible in extremely metal poor stars, in particular the carbon enhanced s-process rich stars in binaries.
Models of AGB star evolution and nucleosynthesis include a wide range of approaches: parameterized s-process post-processing, stellar evolution models with various assumptions on stellar mixing as well as, more recently, hydrodynamic simulations of He-shell flash convection. New studies have been caried out to investigate the sensitivity of mixing and element production to nuclear reaction rates.

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