Contribution ID: 8

Impact of temperature- and density-dependent decay rates on the production of p-nuclei in low-mass AGB stars

Wednesday 16 October 2024 15:50 (10 minutes)

By definition, the proton-rich isotopes that cannot be reached by neutron-capture processes are the *p*-only isotopes or the *p*-nuclei. However, several *p*-nuclei can produced by the *s* process in low-mass AGB stars, e.g. (1) ⁹⁴Mo by two consecutive neutron captures of ⁹²Mo and following the decay of ⁹³Zr and ⁹⁴Nb, (2) ¹⁰⁸Cd depending on the β -decay rate of ¹⁰⁷Pd and ¹⁰⁸Ag, and (3) ¹⁵²Gd due to the operation of ¹⁵¹Sm and ¹⁵²Eu branching points. We present how the use of temperature- and density-dependent β -decay and electron-capture rates instead of terrestrial/constant values affects the production of ⁹⁴Mo, ¹⁰⁸Cd and ¹⁵²Gd in *Monash s*-process nucleosynthesis models.

Length of presentation requested

Oral presentation: 8 min + 2 min questions (Poster-type talk)

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Stellar Models and Galactic Chemical Evolution

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