Nuclear Physics in Astrophysics XI



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The i-process in AGB stars with Overshoot

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The production of neutron-rich elements at neutron densities intermediate to those of the s- and r-processes, the so-called i-process, has been identified as possibly being responsible for the observed abundance pattern found in CEMP-r/s stars. The production site may be low-metallicity stars on the Asymptotic Giant Branch where the physical processes during the thermal pulses are not well known. In this talk I will present models of a 1.2 M \square , Z=5 × 10–5 star, exploring the impact of overshoot parameters on proton ingestion events (PIEs) and the neutron densities as a necessary precondition for the i-process. In addition, light element abundances in our models can be leveraged to favor certain sets of overshoot parameters.

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