

Nucleosynthetic Yields from realistic neutrino-driven explosions of core-collapse supernovae in 1D

Friday 13 June 2025 18:50 (20 minutes)

Core-collapse supernovae are one of the most important sources of heavy elements in the universe. Therefore, accurate modeling of the stellar evolution and the explosion phases are crucial to obtain accurate predictions of their nucleosynthetic signature. In this talk I will present results from nucleosynthesis calculations of realistic neutrino-driven supernova explosions in spherical symmetry. I will comment on the explosive nucleosynthesis, weak r-process component calculated with realistic neutrino spectra, as well as the contribution of the pre-supernova seeds to the final yields. As a representative example, I will discuss Ti44 , a radioactive isotope that powers the late-time light curve of supernovae and whose abundance has been measured in several supernova remnants. I will discuss different production mechanisms both pre- and postcollapse as well as the potential impact of multi-dimensional effects on its final abundance.

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