Nucleosynthesis in Core-Collapse Supernovae

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Core-collapse supernovae (CCSNe) are one of the most important nucleosynthesis sites and they hold a key role in the evolution of galaxies. In the explosion, CCSNe eject freshly synthesized iron-group nuclei from explosive burning alongside of intermediate mass elements (from hydrostatic and explosive burning) and carbon and oxygen from the pre-explosion evolution. In the neutrino-driven wind, nuclei beyond the iron group can be synthesized under neutron-rich conditions (weak r-process) and proton-rich conditions (νp-process). The signature of CCSN nucleosynthesis can be observed in the atmospheres of the oldest stars. Here, we will compare the nucleosynthesis from different progenitor models and different methods to trigger explosions in spherical symmetry. We will discuss the detailed synthesis pathways and the possible effects on the yields from the details of the progenitor and/or explosion properties.