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Nucleosynthesis in core-collapse supernovae

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Core-collapse supernovae play a central role in the chemical evolution of the universe. They eject the elements synthesised during the life of massive stars and produce heavy elements. There have been major advances in the hydrodynamical simulations and in the microphysics included (neutrinos and high density equation of state), in galactic chemical evolution models, and in observations of old stars in our galaxy and in dwarf galaxies. This talk will report on recent developments to understand these extreme environments and their nucleosynthesis beyond iron group nuclei, which depends on the explosion mechanism: neutrino-driven or magneto-rotational supernovae. Moreover, the combination of nucleosynthesis calculations and observations can constrain the astrophysics conditions, once the nuclear physics uncertainties are reduced.

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