

# Neutrino Nucleosynthesis in the outer layers of supernovae

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We study influence of an extensive set of neutrino induced reactions on nucleosynthesis calculations for the outer layers of a supernovae. We use cross sections calculated for almost the whole nuclear chart including multi-particle evaporation.

${}^7\text{Li}$  is known to be produced by neutrino processes involving  ${}^4\text{He}$ . In our calculations we find an additional channel  ${}^{12}\text{C}(\nu, \nu' \alpha p)$ . Furthermore, we have explored the impact of  $\nu$ -nucleosynthesis on the production of long-lived radioactives. The yield of  ${}^{26}\text{Al}$  is increased by a factor of 1.5.

${}^{22}\text{Na}$  is found to be particularly sensitive to neutrino interactions. The sensitivity to the progenitor mass and the neutrino spectrum is also explored.