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Studies of 7Li(α,γ)11B at ν-process energies

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At the end of its life, a massive star can collapse into a proto-neutron star leading to a supernovae explosion. The neutrino flux released during the collapse and the explosion is so significant that the probability of a neutrino interacting with a nucleus can actually influence the nucleosynthesis, the so-called ν-process.

The ν-process is believed to explain the origins of light element, especially the one of ^{11}B, which is not fully understood. It has been proposed as a candidate for its production in core collapse supernovae. Neutrino triggered reaction lead to the production of (^11)B via the reaction $^{7}Li(,)^{11}B$.

The cross section of $^{7}Li(,)^{11}B$ is then critical to estimate the contribution of the ν-process to ^{11}B abundance, constraining at the same time the ν-process. This reaction was recently studied at Notre Dame in the range of energy relevant to the ν-process and the result of this experiment will be presented.

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