

Improvement of neutron-oxygen reaction model at Super-Kamiokande for neutrino neutral current interaction study

lundi 16 juillet 2018 14:30 (25 minutes)

Deeper understanding of neutrino neutral current elastic interaction is desired for improving sensitivity in search for supernova relic neutrinos at Super-Kamiokande. Measuring the interaction with the T2K beam is an effective way, however, currently large systematic errors remain due to a poor model to describe neutron-oxygen reactions. To improve the current model, external experiments complementing insufficiency of the external libraries were conducted using a neutron beam. In this talk, the results from the beam tests and comparison with several libraries as well as the impacts on a neutrino cross section measurement are given.

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Classification de Session: Artificial Neutrino Sources