

## Measurement of cosmogenic neutron production in SK-Gd

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SK-Gd experiment has been started with gadolinium (Gd) added to ultra-pure water in Super-Kamiokande. SK-Gd dramatically improves the sensitivity to supernova relic neutrino searches by tagging neutrons. Cosmic-ray muons flying into Super-Kamiokande induce hadronic showers. Those break oxygen nuclei in water and produce unstable radioactive isotopes and neutrons, which are major background sources for supernova relic neutrino searches.

In addition, the cosmogenic neutrons can be used for the detector calibration source. Since cosmic-ray muons fly into Super-Kamiokande continuously with the rate of 2 events/s, the cosmogenic neutrons can be used to check the stability and uniformity of the Gd concentration in the detector.

In this presentation, I will report the current status of cosmogenic neutron measurement in SK-Gd.

### Reference to paper (DOI or arXiv)

### Your gender (free text)

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