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## **Measurement of the neutrino-oxygen neutral-current quasielastic cross section using atmospheric neutrinos in the SK-Gd experiment**

*Monday 28 August 2023 14:30 (15 minutes)*

In July 2020, we loaded 0.011% of gadolinium in Super-Kamiokande (SK) to enhance the detection efficiency of neutron signals and restarted the observation as the “SK-Gd experiment”. Now we are aiming to observe the Supernova Relic Neutrinos (SRNs) for the first time all over the world in the SK-Gd experiment. One of the main backgrounds in the SRNs search is the atmospheric neutrino-oxygen neutral-current quasielastic (NCQE) reactions. To discover the SRNs, it is essential to understand the neutrino-oxygen NCQE cross section and estimate the backgrounds more precisely. In this talk, we report the first result of the measurement of the neutrino-oxygen NCQE cross section using atmospheric neutrinos in the SK-Gd experiment and the consideration.

### **Submitted on behalf of a Collaboration?**

Yes

**Primary author:** SAKAI, Seiya (Okayama University, Japan)

**Presenter:** SAKAI, Seiya (Okayama University, Japan)

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