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Search for nucleon decay in Super-Kamiokande

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The standard model has been successful in accounting for many experimental results. However, the standard model has unanswered questions: why there are so many parameters? Various attempts have been made to resolve the shortcomings by unifying the electroweak and the strong interactions in the context of Grand Unified Theory (GUT). One of the generic predictions of GUTs is the instability of nucleons. The experimental observation of nucleon decay would provide a strong evidence of GUTs. In this talk, I will present about nucleon decay search in Super-Kamiokande, a large water cherenkov detector, with total exposure 2,288 days (SK1:1489 days, SK2:799days). As a result, we did not observe statistically significant evidence for the nucleon decay and updated their lifetime limits.

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