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## Searching for Proton Decay in JUNO

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Proton Decay is a main consequence of Baryon Number Violation and is predicted in several Grand Unified Theories (GUTs). It is one of the conditions to explain the asymmetry of matter and anti-matter in our universe. One of the main proton decay channels favored by supersymmetric GUTs is  $p$  to  $K^+$  and  $\bar{\nu}$ . By now, Super-Kamiokande has set a lower lifetime limit of  $5.9 \times 10^{33}$  years for this channel. The Jiangmen Underground Neutrino Observatory (JUNO) is a 20 kton liquid scintillator detector currently under construction in China and is expected to reach the order of  $10^{34}$  years after ten years of data taking.

In this talk, I present a general strategy of JUNO for the search of the proton decay and main background reactions due to atmospheric neutrinos will be discussed. One open issue is the still unknown quenching behavior of the  $K^+$  in the scintillator of JUNO, which we aim to solve in dedicated experiments at accelerators.

**Primary author:** FAHRENDHOLZ, Ulrike

**Presenter:** FAHRENDHOLZ, Ulrike

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