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Prospects for Proton Decay Searches in JUNO

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Proton Decay is one of the apparent consequences of Baryon Number Violation, which has been predicted in many Grand Unified Theories. It would become an explanation to the asymmetry of matter and anti-matter in the universe. Many experiments have been contributing to search for this rare but key sign of new physics. Among them, SuperK has acquired the best result. On the channel p to ν and K+, the lower limit of proton lifetime has been predicted to be 5.9×10^33 years. Jiangmen Underground Neutrino Observatory (JUNO), which is a 20 kton liquid scintillator detector under construction in China, should have high sensitivity based on our recent research. With a high detection efficiency and large sensitive mass, it is expected to reach the order of 10^34 in ten years running time. In this poster, the preliminary study including simulation work and algorithm design will be presented.

Secondary track (number)

02

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