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Liquid scintillators for Daya Bay neutrino experiment and JUNO experiment

Daya Bay Reactor Neutrino Experiment is designed to measure the mixing angle θ13 using 8 identical Anti-neutrino detectors (AD). Each AD contains 20-ton Gadolinium-loaded liquid scintillator (Gd-LS) as the target for catching neutrino. Optical properties and stability of Gd-LS are of great important for the experiment. Here we report the choice of Gd-LS recipe and the preparation procedures of 185-ton Gd-LS. Both results based on periodical characterization of Gd-LS and data taken from AD show 185-ton Gd-LS meets the requirements of Daya Bay experiment.
Jiangmen Underground Neutrino Observatory (JUNO) is a multipurpose neutrino experiment which is going to use a huge detector containing 20-kiloton liquid scintillator for catching neutrino. Requirements for JUNO LS, such as attenuation length, light yield and radio-impurity content, are very strict because of the size of the detector. Pre-study of LS at IHEP show production of 20-kt qualified LS are very promising.

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