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Measurements of light yield quenching and the ^{14}C content in liquid scintillator of 5 ton prototype of Baksan Large Neutrino Telescope Project

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Liquid scintillators have always been an important part of many experiments in neutrino physics. The liquid scintillator based on linear alkylbenzene (LAB) is used in a prototype of Baksan Large Neutrino Telescope, which is proposed to be constructed at the Baksan Neutrino Observatory. The main disadvantage of liquid scintillator is the non-linear response to highly ionizing radiation, called ionization quenching. The response of the LAB-based scintillator was measured in the energy range of gamma-quanta from 60 keV to 1.3 MeV and the Birks parameter was obtained. The ^{14}C content of a LAB-based scintillator has been measured using the prototype of Baksan Large Neutrino Telescope with the scintillator mass of 0.5 tons. The $^{14}\text{C}/^{12}\text{C}$ ratio has been obtained.

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