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Ageing of the scintillator detectors of the T2K off-axis and on-axis near detectors, ND280 and INGRID

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Detector systems fully or partially composed of solid polystyrene-based scintillator bars are used in many experiments. Given their wide variety of applications it is important to deepen our understanding of how scintillator performance changes with time. The long baseline neutrino experiment T2K (Tokai to Kamioka) has collected data since 2010. Most of the subsystems of the off-and on-axis near detectors, ND280 and IN-GRID, both located at J-PARC, 280m downstream from the proton beam target, are composed of scintillators of different shapes and origin. The data they have collected provide an opportunity to perform comprehensive studies of scintillator ageing. New studies of the ageing of the scintillator detectors of ND280 and INGRID are reported in this talk. Muon data recorded throughout the lifetime of the experiment were used to measure the decrease in light yield over time.

Collaboration name

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