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Quality control of wavelength shifting fibers during assembly for a new T2K near detector SuperFGD

T2K is a long baseline neutrino oscillation experiment in Japan. We are constructing a new tracking detector SuperFGD which consists of 2 million plastic scintillator cubes. The detector will enable us to measure neutrino interactions more precisely.

Approximately 55,000 wavelength shifting fibers are inserted into the cubes to read out the scintillation light. It is important to identify the damaged fibers when the transmission efficiency gets worse during insertion work. To find bad fibers quickly and control the quality of the insertion work continuously, we have developed a dedicated system which can be operated in parallel with the fiber insertion work. I will report a method and a result of quality control conducted for the actual detector.

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