

Research and Development of Jinping Neutrino Experiment

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The Jinping Neutrino Experiment (JNE), situated in the world's deepest underground laboratory, the China Jinping Underground Laboratory (CJPL), conducts research on solar neutrinos, geo-neutrinos, supernova neutrinos, and neutrinoless double beta decay. The Jinping Neutrino one-ton prototype, located in CJPL-I, has completed measurements of cosmic rays and background. Next, JNE plans to build a multi-hundred-ton neutrino detector in CJPL-II by the end of 2026. Using simulations, we've optimized the detector's geometry and finished structural design. The excavation of the foundation pit in D2 Hall of CJPL-II is completed. The detector will use new 8-inch MCP-PMTs, undergoing tests; self-developed ADC has been tested on the one-ton prototype. Oil and water-based slow liquid scintillators (SLSs) are developed. We have also developed reconstruction algorithms for SLSs, enabling particle identification of electrons, gamma rays, and protons in the several MeV energy range.

Collaboration you are representing

JNE

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