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The Prospect of Solar Neutrino Study of the Jinping Neutrino Experiment

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Solar neutrino experiments triggered almost all modern neutrino oscillation experiments and neutrino astrophysics research. The solar neutrino oscillation assumption is still missing two experimental evidence, i.e. the transition of matter dominated oscillation from high energy to vacuum oscillation at low energy, and a clear day-night difference due to the Earth matter effect. The standard solar model is also not experimentally complete since the neutrinos from carbon-nitrogen-oxygen fission cycle is not observed yet. The high-low metallicity problem presents a new challenge to the solar evolution model. Jinping underground laboratory has an overburden of 2400 meter of rock and is an ideal site for low background solar neutrino experimental research. In this talk, the Jinping laboratory, the proposed Jinping neutrino experiment, and the physics prospect will be discussed. The recent progress on detector R&D will also be presented.

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