

Neutrino Oscillation Physics with JUNO

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The Jiangmen Underground Neutrino Observatory (JUNO) is a 20-kton liquid scintillator detector currently under construction 700 m underground in southern China. The detector is located 53 km from the Taishan and Yangjiang nuclear power plants and will simultaneously probe solar (Δm_{21}^2) and atmospheric (Δm_{31}^2) oscillations using reactor antineutrinos. The primary goals of the experiment are the determination of the Neutrino Mass Ordering (NMO) and the precision measurement of the neutrino oscillation parameters Δm_{21}^2 , Δm_{31}^2 , and $\sin^2 \theta_{12}$. In order to determine NMO with $\sim 3\sigma$ significance using around 6 years of data, a high energy resolution ($\leq 3\%$ at 1 MeV) and low energy scale uncertainty ($< 1\%$) are needed. This talk will discuss the current status of JUNO and its various neutrino oscillation physics prospects.

Working Group

WG 1: Neutrino Oscillation Physics

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