

## Neutrino Oscillation Physics with JUNO

*Tuesday, 17 September 2024 14:05 (20 minutes)*

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 ( $\Delta m_{21}^2$ ) and atmospheric ( $\Delta m_{31}^2$ ) 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  $\Delta m_{21}^2$ ,  $\Delta m_{21}^2$ , 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

**Primary author:** KUMARAN, Sindhujha (University of California, Irvine)

**Presenter:** KUMARAN, Sindhujha (University of California, Irvine)

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