

Status of JUNO

Wednesday, 4 July 2018 11:30 (30 minutes)

The Jiangmen Underground Neutrino Observatory (JUNO) is a medium-baseline reactor neutrino experiment, currently under construction in South China. The chosen site is equidistant from two nuclear power plants at the 53 km solar oscillation maximum. The combined projected thermal power of the reactors will be 35.8 GWth. The central detector will consist of a large acrylic sphere, 35.4 m in diameter, supported by a stainless-steel truss. The primary goal of JUNO is to resolve the neutrino mass hierarchy with at least 3σ significance by reconstructing energy spectrum of reactor neutrinos registered using 20 kT of liquid scintillator. To reach this goal an unprecedented energy resolution of 3% @ 1 MeV must be achieved, and a multitude of technical challenges solved. JUNO is also expected to improve the precision of solar oscillation parameters and the atmospheric mass-squared splitting to better than 1%. As a multi-purpose detector, JUNO can also detect geoneutrinos, neutrinos from core-collapse supernovae, search for dark matter, sterile neutrinos, and other non-standard interactions. The excavation of the experimental hall started in March 2018. JUNO collaboration has now 550 members from 72 institutes in 16 countries and continues to grow. This talk will present the physics case, the design, and the latest status of JUNO.

Co-Authors (Collaboration)

JUNO Collaboration

Primary author: TRZASKA, Wladyslaw Henryk (University of Jyväskylä)

Presenter: TRZASKA, Wladyslaw Henryk (University of Jyväskylä)

Session Classification: Plenary Session 10