

# The 22nd international workshop on Next Generation Nucleon Decay and Neutrino Detectors (NNN23)



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## The JUNO Experiment: Status and Prospects

*Wednesday, 11 October 2023 18:00 (30 minutes)*

JUNO is a neutrino experiment aiming to detect antineutrinos emitted from nuclear reactors and from the inner layers of the Earth, as well as neutrinos from galactic and extragalactic sources. It comprises an active target mass made of 20 kton organic liquid scintillator, monitored by more than 40000 photosensors. JUNO aims to shed light on several open questions in fundamental particle physics and astrophysics. Among others, to determine the neutrino mass ordering with a confidence greater than 3 sigmas, to measure with sub-percent precision three of the neutrino oscillation parameters, to improve the current limits on the proton lifetime, to help addressing the solar metallicity problem, to detect the diffuse supernova neutrino background and to be ready to detect a core-collapse supernova neutrino burst, and to investigate several theories predicting physics beyond the Standard Model.

In this talk I will provide an overview of the status of the detector construction and of the ongoing commissioning activities. I will also report updated sensitivity estimates to the main JUNO Physics goals.

**Presenter:** Dr GRASSI, Marco (Università degli studi di Padova, Italy)

**Session Classification:** First Day - Contributed Talk