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Status and Physics Prospects of JUNO experiment

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The Jiangmen Underground Neutrino Observatory (JUNO) is a 20 kton liquid scintillator detector currently being built in an underground laboratory in South China. The construction is expected to be completed by the end of 2023. JUNO will feature a remarkable energy resolution of 3% at 1 MeV, a large detector volume, and exceptional background control. With these advantages, JUNO will become a flagship experiment in the coming decades, primarily focused on determining the neutrino mass ordering, and precise measurements of the neutrino oscillation parameters using reactor antineutrinos. Additionally, JUNO's versatility as a multi-purpose neutrino observatory, positions it as a strong contender in the searches for diffuse supernova neutrino background (DSNB), the core-collapse supernova (CCSN) neutrinos, solar neutrino, atmospheric neutrinos, geo-neutrinos, nucleon rare decays and other new physics beyond the Standard Model. This presentation will provide an update on the status of the JUNO experiment and the latest evaluations of JUNO's physics goals.

Primary author: CHENG （程）, Jie （捷）(North China Electric Power University)

Presenter: CHENG （程）, Jie （捷）(North China Electric Power University)

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