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JUNO: Status and Prospects

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The Jiangmen Underground Neutrino Observatory (JUNO) will be a 20-kiloton liquid scintillator detector, currently under construction in southern China. JUNO will be instrumented with close to 18,000 20-inch photomultiplier tubes (PMTs) and 26,000 3-inch PMTs, possessing the highest photocathode coverage of any kiloton-scale liquid scintillator or Cherenkov detector to date. JUNO aims to use its first-rate size, energy resolution and low background levels to deploy a broad physics programme, measuring neutrino energies from 10s of keV to 10s of GeV. JUNO's primary physics goal is to resolve the fine structure due to oscillations in the nuclear reactor antineutrino energy spectrum, in order to determine the neutrino mass hierarchy and measure several oscillation parameters to a sub-percent precision. In this talk, I will discuss the status of the JUNO experiment as well as its physics potential. I will review the experiment's program with a number of terrestrial and astrophysical neutrino sources such as solar neutrinos, supernovae, geoneutrinos, atmospherics, along with searches for rare BSM decays.

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