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Status and perspectives of the JUNO experiment

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JUNO (Jiangmen Underground Neutrino Observatory), a 20 kton multi-purpose underground liquid scintillator detector, has been proposed and approved for realization in the south of China. After an intense design phase, the overall structure of the detector has been fully finalized, paving the way towards the construction of the several components and subsystems, which is now in a very advanced stage. Meanwhile, the excavation of the site, which will host the experiment is rapidly progressing towards its completion. The main physics target of JUNO is the determination of the neutrino mass hierarchy, which will be accessible through the measurement of the antineutrino spectrum from two high power nuclear complexes under installation 53 km away from the experimental site. In my talk I will describe the broad physics capabilities of the experiment, which include in addition to the crucial measure of the neutrino hierarchy the high precision determination of three oscillation parameters, as well as a rich astroparticle program. Moreover, I will illustrate the main technical characteristics of the detector, and I will report the status of the construction work.

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