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Status and Physics Prospects of the JUNO Experiment

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The Jiangmen Underground Neutrino Observatory (JUNO) is a multi-purpose neutrino experiment under construction at a baseline of roughly 52.5 km from 8 nuclear reactors in China. JUNO will use an acrylic sphere containing 20 kton of liquid scintillator surrounded by about 18,000+25,000 (20-inch + 3-inch) photomultiplier tubes immersed in ultrapure water as the primary neutrino target. In addition to determining the neutrino mass ordering and measuring three neutrino oscillation parameters to sub-percent precision using reactor antineutrinos, JUNO will also have a rich physics program with neutrinos from the Sun, the Earth, the atmosphere, and supernovae. The collaboration will also deploy a satellite detector very near to one of its 4.6 GWth reactor cores to make precision measurements of reactor antineutrino emission. The design, status, and physics prospects of the experiment will be covered in this talk.

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