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The JUNO experiment computing model

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The Jiangmen Underground Neutrino Observatory (JUNO) is a 20 kton multi-purpose underground neutrino detector which was proposed in order to determine, as its primary goal, the neutrino mass hierarchy. The large fiducial volume, together with the excellent energy resolution foreseen, would allow to perform also a series of important measurements in the field of neutrinos and astro-particle physics.
To address the mass hierarchy issue, the JUNO detector will be surrounded by a cluster of nuclear power plants at a distance of around 50 km. The resulting reactor antineutrino flux gives the possibility to determine the neutrino mass hierarchy with a significance level of 3-4σ, with six years of running JUNO. The measurement of the antineutrino spectrum with excellent energy resolution will lead also to a precise determination of the solar neutrino oscillation parameters, $sin^2\theta_{12}$ and Δm^2_{21}, with an accuracy below 1\%.
The JUNO characteristics make it a suitable detector not only for neutrinos coming from the power plants, but also for neutrinos generated inside the Sun, or during supernovae explosions, or even in the Eart's crust and atmosphere. Other topics of interest potentially accessible to JUNO include the search for sterile neutrinos, proton decay and dark matter annihilation.

Data taking is expected to start in 2021.

In this paper the computing model is discussed taking into account different choices. The computing resources for the simulations have been evaluated, together with the resources needed for the data management.

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