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Non-oscillation Physics at JUNO

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The Jiangmen Underground Neutrino Observatory (JUNO), currently under construction in South China, will be the largest liquid scintillator (LS) experiment. While its primary goals are determining the neutrino mass ordering (NMO) and precision measurements of the oscillation parameters, it is a multi-purpose detector capable of detecting neutrinos from sources like the Sun, supernovae, the Earth, and the atmosphere other than reactors. With excellent detector performance in energy resolution (3% at 1 MeV) and low background level (10^{-17} g/g U238/Th232) in such a large LS detector (20 kton), a rich program of non-oscillation related physics expanding from several tens of keV to tens of GeV can be explored. In this talk, the physics potential with various astrophysical and natural terrestrial neutrino sources, as well as rare event searches such as proton decay, will be presented.

Submitted on behalf of a Collaboration?

Yes

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