

The multimessenger astrophysics potential of the JUNO experiment

Wednesday, September 28, 2022 11:40 AM (20 minutes)

JUNO will be the largest ever built liquid scintillator detector for neutrino physics. It will be sensitive to various astrophysical neutrino sources, including solar neutrinos, the diffuse supernova neutrino background, pre-supernova neutrinos and the all-flavor neutrino flux from a Galactic core-collapse supernova (CCSN) with high statistics. For the purpose of maximizing the physics reach of JUNO when used as a neutrino telescope, two trigger systems will operate in JUNO to search for a transient astrophysical signal in real time: a dedicated multimessenger (MM) trigger system and a Prompt CCSN monitor, the latter embedded in the global trigger system. This talk will report the expected performance of JUNO for the detection of the different neutrino fluxes from the mentioned sources, highlighting the unique contributions it will bring to the understanding of the physics behind the various astrophysical phenomena.

Primary author: COLOMER MOLLA, Marta (ULB (IIHE))

Presenter: COLOMER MOLLA, Marta (ULB (IIHE))

Session Classification: Session 5