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The ESSnuSB/ESSnuSB+ detector design

Tuesday, 18 June 2024 17:30 (2 hours)

The ESSnuSB (European Spallation Source neutrino Super Beam) project is a design study for an experiment to measure the CP violation in the leptonic sector by observing neutrino oscillations in the second oscillation maximum. The high intensity neutrino beam will be produced using the ESS (European Spallation Source) proton linear accelerator, which will be the most powerful proton driver in the world at the 5 MW average beam power. The ESSnuSB experiment is foreseen to be implemented in a staged approach. In the first phase of the project there will be a comprehensive campaign to measure neutrino-water interaction cross sections using the monitored neutrino beam similar to ENUBET project and the neutrino beam from the low-energy nuSTORM ring. The construction of the large 540 kt fiducial mass water-Cherenkov far detectors is expected to proceed in parallel with the cross-section measurement campaign; once they are completed, the second phase of the experiment will start in which the actual CP violation measurement will be performed. This poster will give an overview of the current design of the ESSnuSB detectors, both at the near and the far detector sites.

Poster prize

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