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ESSnsSBplus Target Station Design Study

Thursday 18 July 2024 20:40 (20 minutes)

Several leptogenesis models predict that the CP violation (CPV) necessary for the generation of the observed baryon asymmetry is driven exclusively by the CP-violating phase in the PMNS leptonic mixing matrix, δCP. The value of δCP must be measured with the highest precision in order to verify or reject some of these and the various lepton flavours models, each of which predicts a specific δCP value. The ESSνSB+ aims at measuring the ν-Nucleus cross-section in the low energy range of the ESSνSB, ca. 0.2–0.6 GeV, for the precise determination of δCP value using a LE-nuSTORM and a LE-Monitored Neutrino Beam facilities.

Several technological challenges must be studied before addressing the design of the ESSνSB+ experiment. Among these, the design of the special ESSνSB+ target station and the physical characteristics of the pion beam considered highest priority.

This talk will shed more light on the design study currently running for this important part of the experiment.

Alternate track

1. Neutrino Physics

I read the instructions above

Yes

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