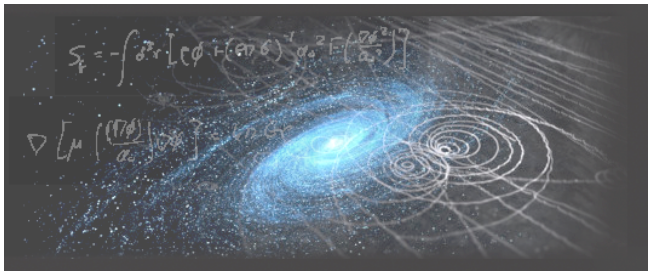

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Atmospheric neutrino oscillations at the ESSnuSB far detectors

Tuesday, 22 October 2024 16:00 (15 minutes)

The European Spallation Source neutrino SuperBeam (ESSnuSB) project plans to send high-intensity beams of neutrinos and antineutrinos to study neutrino oscillations over a 360-km-long baseline. The main goal of the project is to measure the leptonic *CP* phase by studying neutrino oscillations at the second oscillation maximum. In this talk, we discuss the prospects of observing atmospheric neutrinos at the ESSnuSB far detector facility, which consists of two cylindrical Water Cherenkov detectors with a total of 540 kt fiducial mass. The physics prospects that are examined in this work include the determinations of the neutrino mass ordering and the θ_{23} octant, and also the precisions for the leptonic mixing parameters θ_{23} and Δm^2_{31}.

Summary

Primary author: VIHONEN, Sampsa (KTH Royal Institute of Technology)

Presenter: VIHONEN, Sampsa (KTH Royal Institute of Technology)

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