

Phenomenological Study on DUNE's sensitivity to Atmospheric neutrinos

venerdì 21 giugno 2024 17:30 (2 ore)

The Deep Underground Neutrino Experiment (DUNE) is a next-generation long baseline neutrino experiment that will take place in the US. This experiment will feature in its first phase two Liquid Argon Time Projection Chambers (LArTPCs) with a volume of 17kt each. In addition to the accelerator neutrino program, the DUNE far detector will provide a unique opportunity to study atmospheric neutrinos with precision. Due to their wide distribution in energy E and large distance travelled L , atmospheric neutrinos allow to probe a wide range of E/L values and therefore can provide invaluable insights into the different parameters of the PMNS matrix. Moreover, the results obtained with this source of neutrinos will be complementary to the accelerator neutrino program of DUNE and the joint analysis will improve sensitivity, or contrarily raise tensions hinting at new physics. This poster will show a phenomenological study sensitivities to the oscillation parameters and the mass hierarchy from atmospheric neutrinos simulations in a DUNE-like setup.

Poster prize

Yes

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Classifica Sessioni: Poster session and reception 2

Classificazione della track: Atmospheric neutrinos