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DUNE Far Detector: current and new technologies

Thursday 31 October 2024 14:45 (30 minutes)

The primary objectives of Deep Underground Neutrino Experiment (DUNE) include testing the CP violation in the neutrino sector and the hierarchy of neutrino masses. In this talk, I will present the Far Detector (FD) and its role in achieving the DUNE physics goals. I will present FD design and its capabilities in measuring beam neutrinos and neutrinos from other sources, including astrophysical. I will discuss the technologies of the first two modules and show the differences between Horizontal Drift and Vertical Drift. I will briefly discuss the role of the photodetection system and the challenges in improving it. Finally, I will discuss prospects for the following two modules and how they can enhance DUNE sensitivity to oscillation parameters such as mass hierarchy and delta-CP phase.

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