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Type: **Parallel Talk**

## Neutrino Oscillation Measurements at T2K

*Thursday, 7 July 2022 09:00 (15 minutes)*

T2K is a long baseline neutrino oscillation experiment, which studies the oscillations of the neutrinos from a beam produced using the J-PARC accelerator. The beam neutrinos propagate over 295 km before reaching the Super-Kamiokande detector, where they can be detected after having oscillated. The ability of the experiment to run with an either neutrino or anti-neutrino beam makes it well suited to study the differences between the oscillations of neutrinos, in particular to look for a possible violation of CP symmetry in the lepton sector. T2K has produced a new analysis of its first 10 years of data, with improved models to describe neutrino interactions and fluxes as well as additional samples for its near and far detector analyses. We will present the results on the measurement of the parameters describing neutrino oscillations obtained with this new analysis.

T2K is undergoing major upgrades with an improved beam power, an upgraded near detector and the loading of Super-Kamiokande with Gadolinium. The status of these upgrades and prospects for future T2K measurements will be discussed. In parallel, T2K has been working on joint analyses with other experiments, and we will give an update on the perspective of the 2 joint analyses in preparation, with respectively the Super-Kamiokande and the NOvA collaborations.

### In-person participation

Yes

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