

Details of the T2K oscillation analyses

T2K is a long-baseline neutrino experiment in which a muon neutrino beam produced by J-PARC in Tokai is sent 295 km across Japan to the Super-Kamiokande detector. The experiment studies neutrino oscillations via the disappearance of muon neutrinos and the appearance of electron neutrinos. T2K has conclusively observed muon neutrino to electron neutrino oscillations, opening the door to the observation of CP violation in the lepton sector. Since 2014, the experiment has run alternating neutrino and antineutrino beams in order to precisely measure the corresponding oscillation probabilities, resulting in leading measurements of the muon antineutrino disappearance parameters and results on CP violation in the lepton sector. Different oscillation analyses are performed. They differ for the adopted statistical approach, either frequentist or bayesian, and the kinematical variables used for the analysis templates. In this talk, we will present recently-updated results, focusing on the details of the oscillation analysis methods.

Primary author: SGALABERNA, Davide (CERN)

Presenter: SGALABERNA, Davide (CERN)

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