



Monday 4 July, 11:05 – 11:30

Session 2: Three-flavour mixing: the Standard Neutrino Model

Status, recent results and plans for T2K

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T2K is a long-baseline experiment in which a muon neutrino beam produced by JPARC in Tokai is sent 295 km across Japan to the Super-Kamiokande detector to study neutrino oscillations via the disappearance of muon neutrinos and the appearance of electron neutrinos. Since the start of operations in 2010, T2K has conclusively observed muon neutrino to electron neutrino oscillations, opening the door to the observation of CP violation in neutrino mixing, and performed the most precise measurement of the muon neutrino disappearance parameters. In a joint analysis between these two modes, T2K placed its first constraints on the CP-violating phase δ .

Starting in 2014, T2K has been running primarily with an antineutrino beam in order to study the corresponding antineutrino oscillations, resulting in leading measurements of the muon antineutrino disappearance parameters. In this talk, we will present updated neutrino oscillation results with additional antineutrino data, including a joint analysis with the neutrino data. Other physics topics such as neutrino-nucleus interaction studies and searches for non-standard neutrino properties will be discussed. Finally, the future prospects of the experiment, including a potential extension of the T2K program, will be presented.