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Recent Developments in T2K Oscillation Analysis

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The T2K experiment is a long base-line neutrino experiment located in Japan. Having successfully discovered ν_e appearance from a ν_μ beam, T2K is now aimed at probing CP violation in the lepton sector, the mass hierarchy, and the precision measurement of $\sin^2\theta_{23}$. Since data taking started in 2010, T2K has accumulated 14.7×10^{20} protons on target (POT) in neutrino beam mode, and 7.6×10^{20} POT in antineutrino beam mode.

A new reconstruction algorithm for Super-Kamiokande (SK) – the far detector of T2K – is being used for event selection for the first time. The SK fiducial volume has been expanded,increasing the statistics by $\sim 20\%$ from the previous selection with the same beam exposure. The latest developments in the T2K oscillation analysis within the PMNS framework, especially the measurement of δ_{CP}, will be presented, and details of the analysis will be discussed.

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