

Current result and plan of neutrino beam experiments

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T2K and NOvA experiments are the two long-baseline experiments currently collecting data to study neutrino oscillations, a quantum mechanical interference phenomenon where the observed neutrino flavor differs from that measured earlier, stemming from neutrino mass and flavor states mixing. The T2K experiment is based in Japan with a peak neutrino energy of ~ 0.6 GeV and a baseline length of 295 km, and the NOvA experiment in the USA with a peak neutrino energy of ~ 2 GeV across a baseline of 810 km. Combining results of these two experiments can give further insight into the observed degeneracies in the oscillation parameter space as they are complementary in detector design and analysis methods. A joint analysis combining the 2020 datasets from both experiments into a unified framework was released earlier this year using detailed likelihoods and consistent statistical treatment. This talk will discuss details about the analysis strategy and presents the first results of the combined constraints on neutrino oscillation parameters.

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