

First joint analysis of Super-Kamiokande atmospheric and T2K accelerator neutrino data

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This poster presents new results from the first joint oscillation analysis of atmospheric neutrinos at Super-Kamiokande (Super-K) and accelerator neutrinos at Tokai-to-Kamioka (T2K). Leveraging Super-K atmospheric neutrinos, which are sensitive to mass ordering, and T2K accelerator neutrinos, which are sensitive to the CP violation phase, the joint analysis is able to improve sensitivity by resolving degeneracies between these parameters. This poster presents frequentist and Bayesian results for the neutrino mass ordering, CP violation phase, as well as other mixing parameters. For the test of CP-conservation, a dedicated p-value is introduced with improved statistical properties compared to what can be obtained using confidence intervals on the CP-violation phase. An analysis of the statistical consistency between Super-K and T2K is performed under the common systematic uncertainty model which incorporates correlations between the two experiments. The potential of future joint fits is finally studied using the expected sensitivities on oscillation parameters.

Poster prize

Yes

Given name

Surname

First affiliation

Second affiliation

Institutional email

Gender

Collaboration (if any)

SK, T2K

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