

Seminarium Studium Doktoranckiego NCBJ

Thursday, 14 January, 9:00

<https://www.gotomeet.me/NCBJmeetings/phd-seminar>

Speaker:

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Title:

Constraining T2K oscillation fit using proton information from ND280

Abstract:

Tokai to Kamioka (T2K) is a long baseline accelerator neutrino experiment. T2K uses the near detector (ND280) to constrain cross-section models as well as flux model. This allows to significantly reduce the systematic error of the Far Detector event rate prediction. T2K cross-section models describe various neutrino interactions like CCQE, 2p2h, DIS. Model constraints are obtained by fitting parametrized model to data (so called ND280 fit).

T2K is planning to expand ND280 fit by including proton information (so called proton samples). Proton samples showed improvement in constraints of many parameters describing the model. The crucial feature of proton samples is that they separate phase space of many key variables used in modeling of neutrino interactions. To fully utilize the new samples T2K is also expanding systematic uncertainty model, one of such new parameter is nucleon FSI.