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Statistical methods used in neutrino oscillation experiments

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Many analyses in particle physics are trying to determine for which set of systematic parameters Monte Carlo (MC) predictions are in the best agreement with the collected data. To describe this agreement we use the likelihood function. There are several likelihoods suggested by statisticians each with different assumptions. Another important issue is the treatment of MC statistical uncertainty, which can be incorporated into the likelihood. The seminar will discuss the impact of several likelihood functions, like Conway's or Dembinski-Abdelmotteleb in T2K near detector analysis.

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