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The data fitter of neutrino oscillation experiments in the GNA software

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Neutrino physics has been actively researching for a few last decades and there is a wide variety of open questions. Neutrino oscillation parameters which are supremely important to measure are the charge-parity phase and the neutrino mass ordering. To provide the highest significant level of their values it is necessary to combine data taken from different types of experiments. Currently working neutrino accelerator experiments, NOvA and T2K, have been detecting neutrino interactions in electron neutrino appearance and muon neutrino disappearance modes and these data are the main set to estimate unknown parameters. However, oscillation data from reactor experiments help to reduce some degeneracy in χ^2 calculations. So that the data fitter of accelerator and reactor neutrino experiments is created within GNA. GNA (Global Neutrino Analysis) is a software for neutrino oscillation analysis developed at JINR. One dimensional χ^2 profiles and two dimensional χ^2 contours of neutrino mass differences and mixing angels are plotted based on Monte-Carlo simulation and data taken from NOvA, T2K and Daya Bay experiments.

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