

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

The Extraction of Neutrino Flux from Inclusive Neutrino-Nucleus Reaction TOMOYA MURATA, TORU SATO, Department of Physics, Osaka University — Precise determination of neutrino flux, especially its energy dependence is crucial to advance physics of neutrino mixing parameters. Conventionally, quasi-elastic (QE) events are used to reconstruct the neutrino flux, since neutrino energy can be uniquely determined from observed muon energy and scattering angle. However, pure QE mechanism is main but part of the reaction mechanisms of neutrino reaction. Other mechanisms, such as rescattering, Fermi motion contribute. Moreover those mechanisms interfere with the QE amplitude. There will be limitation of the accuracy of neutrino flux extracted by using QE kinematics. In this report, we propose a method for extraction of neutrino flux from inclusive neutrino-nucleus cross section by using the Maximum Entropy Method (MEM). We demonstrate that one can extract the neutrino flux without assuming QE kinematics.

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Date submitted: 27 Jun 2014

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