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Generator of neutrino-nucleon interactions for the {\sc fluka} based simulation code

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An event generator of neutrino-nucleon and neutrino-nucleus interactions has been developed for the general purpose Monte Carlo code {\sc fluka}. The generator includes options for simulating quasi-elastic interactions, the neutrino-induced resonance production and deep inelastic scattering. Moreover, it shares the hadronization routines developed earlier in the framework of the {\sc fluka} package for simulating hadron-nucleon interactions. The simulation of neutrino-nuclear interactions makes use of the well developed {\sc peanut} event generator implemented in {\sc fluka} for modeling of the interactions between hadrons and nuclei.The generator has been tested in the neutrino energy range from 0 to 10 TeV and it is available in the standard {\sc fluka} distribution. Limitations related to some particular kinematical conditions as well as comparison with experimental data are discussed. A number of upgrades is foreseen for the generator which will optimize its applications for simulating experiments in the CNGS beam.

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