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Simulation of lepton tracks from neutrino events in the upgraded ND280 detector complex of the T2K experiment.

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The upgraded near neutrino detector[1,2,3] of the T2K experiment[4] is briefly described. The central part is the 3D scintillator fine-grained detector (SuperFGD). The detector comprised of about 2 million $1 \times 1 \times 1$ cm³ plastic scintillator cubes with three orthogonal holes for wavelength shifting fiber readout[2,5]. It will be used as an active neutrino target to detect charged particles and photons. A combination of SuperFGD with the other subdetector systems in the ND280 detector provides a possibility to detect more neutrino events (due to an additional active target), as well as to increase the accuracy of the neutrino events reconstruction[3]. In this work, the results of Monte Carlo simulation of the interactions of electron and muon neutrinos in the updated ND280 complex are presented. The efficiency of matching tracks between SuperFGD and other subdetectors of the upgraded ND280 will be discussed.

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