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Electron-neutrino charged-current quasi-elastic cross-section at MINERvA

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The electron-neutrino charged-current quasi-elastic (CCQE) cross-section on nuclei is an important input parameter to appearance-type neutrino oscillation experiments, where it affects both the signal and predicted background rates. Current experiments typically work from the muon neutrino cross-section and apply corrections from theoretical arguments to obtain a prediction for the electron neutrino cross-section, but to date there has been no experimental verification of these estimates in energy ranges applicable to oscillation searches. MINERvA intends to directly measure the electron neutrino differential cross-section vs. Q^{2} on scintillator using electron neutrinos of energies up to 10 GeV. We present the current status of this work, including event selection and early indications of the flux prediction used to compute the cross-section.

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