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Elastic neutrino-electron scattering within the effective field theory approach

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Elastic neutrino-electron scattering provides an important tool for normalizing neutrino flux in modern experiments. This process is subject to large radiative corrections. We determine the Fermi effective theory performing the one-loop matching to the Standard model at the electroweak scale with subsequent running down to GeV scale. Based on this theory, we analytically evaluate virtual corrections and distributions with one radiated photon beyond the electron energy spectrum. We discuss the relevance of radiative corrections depending on conditions of modern accelerator-based neutrino experiments.

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