Erratum: Charged-current neutrino-nucleus scattering off even-even Xe isotopes including the meson-exchange contributions [Phys. Rev. C 111, 014601 (2025)]

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In our original paper the results for the case ^{134}Xe, 2BC-inclusive (two-body-currents-inclusive) model, $\rho = 0.11\,\mathrm{fm}^{-3}$ and $c_D = -6.08$, were from a previous calculation using different settings than intended. The mistake affected the values of the charged-current (CC) scattering cross sections for ^{134}Xe in the minimum 2BC-inclusive case, though only slightly. In this erratum we provide the correct values.

The tables in this erratum follow the same numbering as in our original paper: Table I shows the energy-dependent cross section of CC neutrino scattering at various relevant energies and Table II is the same for CC antineutrino scattering. Tables III–V present the folded cross sections for supernova neutrinos, supernova antineutrinos, and solar ^{8}B neutrinos, respectively. The new corrected values are in bold and the old ones in parentheses. The other CC cross section values for ^{134}Xe, those that did not require revision, are included for context.

In Fig. 1, which replaces the middle two panels of FIG. 4 of our original paper, the energy-dependent cross sections for CC neutrino and antineutrino scattering are shown as functions of (anti)neutrino energy. The minimum 2BC-inclusive case corresponds to the lower bound of the "2BC" curve, so these are the parts of the graphs that have changed. Otherwise the graphs remain unchanged.

TABLE I. Charged-current neutrino scattering cross sections for different neutrino energies for target nucleus ^{134}Xe. Revision for a part of TABLE I of our original paper. For the sake of brevity, the following abbreviations are used: "1BC" for linear g_A model one-body-currents-only calculation, "2bM" for the calculation that takes two-body currents into account (2BC) while using parameter values $\rho = 0.9$ and $c_D = 0.30$ (leading to a maximal result), and "2bm" for the calculation that takes two-body currents into account (again 2BC) with parameter values $\rho = 0.11$ and $c_D = -6.08$ (leading to a minimal result). Revised values are in bold and the originals in parentheses.

		σ_ν ^{134}Xe		
E_ν (MeV)	Units of σ_ν	1BC	2bM	2bm
5	10^{-44} cm^2	62.7	101.0	**61.8** (60.3)
10	10^{-42} cm^2	10.8	16.8	**10.7** (10.4)
15	10^{-41} cm^2	4.83	7.58	**4.76** (4.65)
20	10^{-40} cm^2	1.80	2.78	**1.77** (1.73)
30	10^{-40} cm^2	10.0	15.2	**9.84** (9.62)
40	10^{-39} cm^2	2.21	3.29	**2.17** (2.13)
50	10^{-39} cm^2	3.75	5.48	**3.67** (3.60)
60	10^{-39} cm^2	5.58	8.03	**5.44** (5.33)
70	10^{-39} cm^2	7.57	10.8	**7.35** (7.20)
80	10^{-39} cm^2	9.76	13.7	**9.43** (9.23)

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TABLE II. Charged-current antineutrino scattering cross sections for different antineutrino energies for target nucleus ^{134}Xe. Revision for a part of TABLE II of our original paper. For the sake of brevity, the following abbreviations are used: "1BC" for linear g_A model one-body-currents-only calculation, "2bM" for the calculation that takes two-body currents into account (2BC) while using parameter values $\rho = 0.9$ and $c_D = 0.30$ (leading to a maximal result), and "2bm" for the calculation that takes two-body currents into account (again 2BC) with parameter values $\rho = 0.11$ and $c_D = -6.08$ (leading to a minimal result). Revised values are in bold and the originals in parentheses.

		$\sigma_{\bar{\nu}}$ ^{134}Xe		
$E_{\bar{\nu}}$ (MeV)	Units of $\sigma_{\bar{\nu}}$	1BC	2bM	2bm
5	10^{-50} cm^2	0.00	0.00	**0.00** (0.00)
10	10^{-45} cm^2	3.80	5.20	**3.76** (3.70)
15	10^{-44} cm^2	9.42	13.2	**9.32** (9.17)
20	10^{-43} cm^2	4.60	6.87	**4.55** (4.45)
30	10^{-42} cm^2	3.31	5.27	**3.26** (3.18)
40	10^{-41} cm^2	1.13	1.83	**1.10** (1.08)
50	10^{-41} cm^2	2.79	4.57	**2.73** (2.65)
60	10^{-41} cm^2	6.28	10.3	**6.12** (5.96)
70	10^{-40} cm^2	1.24	2.04	**1.21** (1.17)
80	10^{-40} cm^2	2.21	3.60	**2.13** (2.08)

TABLE III. Total folded cross sections for supernova (electron) neutrinos scattering off ^{134}Xe. Revision for a part of TABLE III of our original paper. Results are shown for one-body-only linear g_A model (1BC) and maximum and minimum values obtained from taking two-body currents into account (2BC). Revised values are in bold and the originals in parentheses.

	$\sigma_{\nu,\,\text{supernova}}$ (10^{-41} cm^2)		
Target	1BC (linear g_A)	$\rho = 0.9$ $c_D = 0.30$	$\rho = 0.11$ $c_D = -6.08$
^{134}Xe	5.27	8.15	**5.19** (5.08)

TABLE IV. Total folded cross sections for supernova (electron) antineutrinos scattering off ^{134}Xe. Revision for a part of TABLE IV of our original paper. Results are shown for one-body only linear g_A model (1BC) and maximum and minimum values obtained from taking two-body currents into account (2BC). Revised values are in bold and the originals in parentheses.

	$\sigma_{\bar{\nu},\,\text{supernova}}$ (10^{-43} cm^2)		
Target	1BC (linear g_A)	$\rho = 0.9$ $c_D = 0.30$	$\rho = 0.11$ $c_D = -6.08$
^{134}Xe	3.03	4.68	**2.98** (2.91)

TABLE V. Total folded cross sections for solar ^{8}B neutrinos scattering off ^{134}Xe. Revision for a part of TABLE V of our original paper. Results are shown for one-bodyonly linear g_A model (1BC) and maximum and minimum values obtained from taking two-body currents into account (2BC). Revised values are in bold and the originals in parentheses.

	$\sigma_{\nu,\,\text{solar}}$ (10^{-42} cm^2)		
Target	1BC (linear g_A)	$\rho = 0.9$ $c_D = 0.30$	$\rho = 0.11$ $c_D = -6.08$
^{134}Xe	4.52	7.07	**4.46** (4.35)

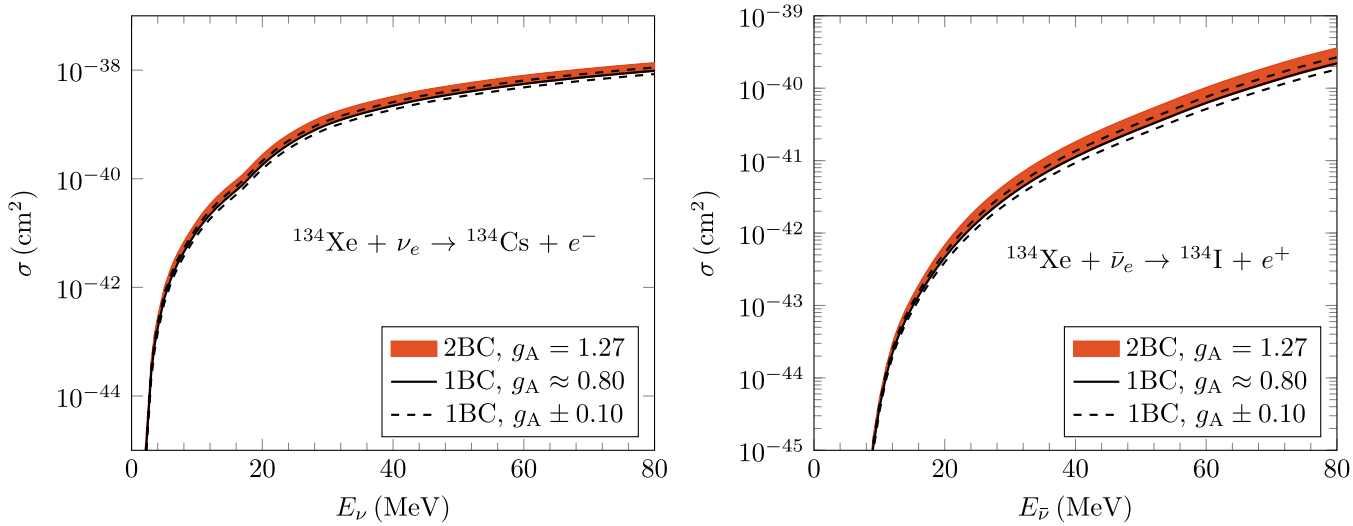

FIG. 1. Total charged-current cross sections as functions of incoming (anti)neutrino energy for CC neutrino (left) and antineutrino (right) scattering off ^{134}Xe with two-body currents taken into account (orange) and one-body-currents-only linear g_A model (line) with error estimate (dashed). Revision for the middle two panels of FIG. 4 of our original paper.