

Erratum to: Dissecting deuteron Compton scattering I: The observables with polarised initial states

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After publication, the author realized that an error was present in the paper as explained below.

In eq. (9) on p. 4, the indices on the deuteron polarisation density matrix are interchanged on the leftmost side, while the other parts are unchanged. The correct form is:

$$\rho_{m'm}^{(d)} := \langle m' | \rho^{(d)} | m \rangle = \frac{(-1)^{1-m}}{\sqrt{3}} \sum_{I=0}^2 \sqrt{2I+1} P_I^{(d)} \sum_{M=-I}^I \begin{pmatrix} 1 & 1 & I \\ m & -m' & -M \end{pmatrix} e^{iM\varphi_d} d_{M0}^I(\vartheta_d) . \quad (9)$$

In eqs. (17) to (19), this leads to the replacement $A_{M_i\lambda_i} A_{M'_i\lambda_i}^* \rightarrow A_{M'_i\lambda_i} A_{M_i\lambda_i}^*$, so that

$$T_{IM} |\mathcal{A}|^2 = \sqrt{3(2I+1)} i^{\delta_{I1}} \sum_{M_i, M'_i, \lambda_i} (-)^{1-M_i} \begin{pmatrix} 1 & 1 & I \\ M_i & -M'_i & -M \end{pmatrix} A_{M'_i\lambda_i} A_{M_i\lambda_i}^* , \quad (17)$$

$$T_{IM}^{\text{circ}} |\mathcal{A}|^2 = \sqrt{3(2I+1)} i^{\delta_{I2}} \sum_{M_i, M'_i, \lambda_i} (-)^{1-M_i} \lambda_i \begin{pmatrix} 1 & 1 & I \\ M_i & -M'_i & -M \end{pmatrix} A_{M'_i\lambda_i} A_{M_i\lambda_i}^* , \quad (18)$$

$$T_{IM}^{\text{lin}} |\mathcal{A}|^2 = \sqrt{3(2I+1)} \sum_{M_i, M'_i, \lambda_i} (-)^{-M_i} (i\lambda_i)^{\delta_{I1}} \lambda_i^M \begin{pmatrix} 1 & 1 & I \\ M_i & -M'_i & -\lambda_i M \end{pmatrix} A_{M'_i\lambda_i} A_{M_i, -\lambda_i}^* . \quad (19)$$

Since the relations to other parametrisations in sect. 2.5 are derived from the unaffected eq. (10), they are unmodified, as are the qualitative discussion and the conclusions. Only the numerical results in sect. 3.3 are affected: $T_{11} \rightarrow -T_{11}$ and $T_{2M}^{\text{circ}} \rightarrow -T_{2M}^{\text{circ}}$ change by an overall sign; $T_{IM}^{\text{lin}} \rightarrow (-)^M T_{I,-M}^{\text{lin}}$ are interchanged; and $\frac{d\sigma}{d\Omega}|_{\text{unpol}}$, Σ^{lin} , T_{2M} , T_{1M}^{circ} and T_{I0}^{lin} are untouched. The detailed textual replacements are (by page, column and line number):

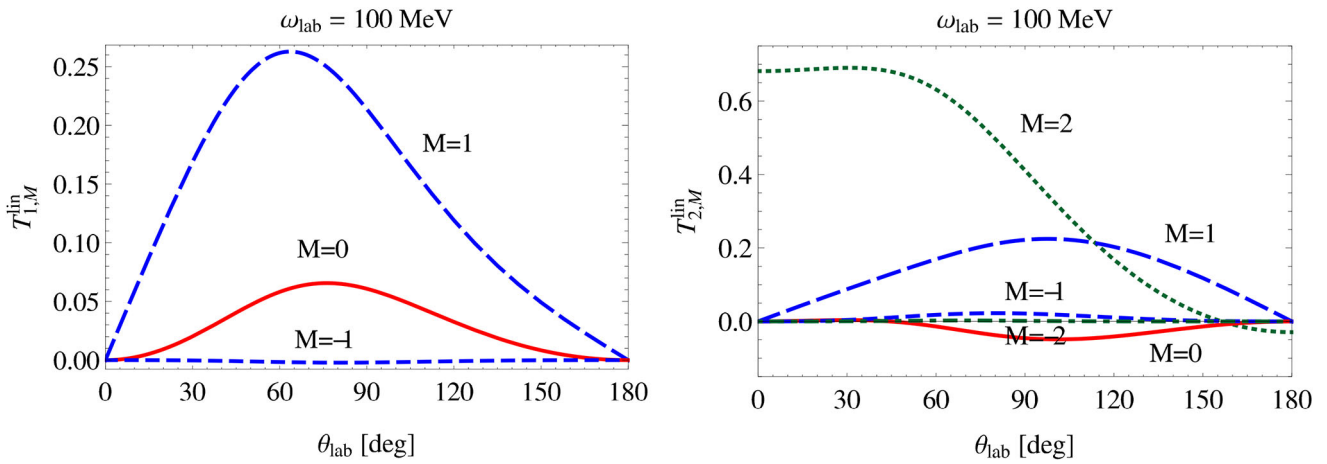
- p. 8, both lines before sect. 3: $T_{2,-2}^{\text{lin}} \rightarrow T_{22}^{\text{lin}}$ and $T_{2(0,2)}^{\text{lin}} \rightarrow T_{2(0,-2)}^{\text{lin}}$;
- p. 13, left, last line: $T_{2,-2}^{\text{lin}} \rightarrow T_{22}^{\text{lin}}$;
- p. 13, right, line 1: $T_{1(0,-1)}^{\text{lin}} \rightarrow T_{1(1,0)}^{\text{lin}}$; line 2: $T_{2(0,-1)}^{\text{lin}} \rightarrow T_{2(1,0)}^{\text{lin}}$ and $T_{21}^{\text{lin}} \rightarrow T_{2,-1}^{\text{lin}}$; line 3: $T_{11}^{\text{lin}} \rightarrow T_{1,-1}^{\text{lin}}$ and $T_{22}^{\text{lin}} \rightarrow T_{2,-2}^{\text{lin}}$; line 6: “negative” \rightarrow “positive”;
- p. 14, left, line 5: $T_{22}^{\text{lin}} \rightarrow T_{2,-2}^{\text{lin}}$; line 9: $T_{1,-1}^{\text{lin}} \rightarrow T_{11}^{\text{lin}}$;
- p. 15, right, line 4: $T_{1,-1}^{\text{lin}} \rightarrow T_{11}^{\text{lin}}$; line 5: $T_{2,-2}^{\text{lin}} \rightarrow T_{22}^{\text{lin}}$; line 9: $T_{11}^{\text{lin}} \rightarrow T_{1,-1}^{\text{lin}}$; line 11: $T_{22}^{\text{lin}} \rightarrow T_{2,-2}^{\text{lin}}$ and $T_{21}^{\text{lin}} \rightarrow T_{2,-1}^{\text{lin}}$;
- p. 17, right, line 9: $T_{2,-1}^{\text{lin}} \rightarrow T_{21}^{\text{lin}}$;

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- p. 18, right, line 6: $T_{21}^{\text{lin}} \rightarrow T_{2,-1}^{\text{lin}}$;
- p. 20, right, line 6: $T_{22}^{\text{lin}} \rightarrow T_{2,-2}^{\text{lin}}$;
- p. 23, right, line 6: $T_{2(1,0)}^{\text{lin}} \rightarrow T_{2(0,-1)}^{\text{lin}}$.

The figures are affected as follows:

- fig. 4 (screenshot) describes a cross section difference with the deuteron quantisation axis along the $-y$ axis for configuration 2, *i.e.* $\phi_{d2} = 90^\circ \rightarrow \phi_{d2} = 270^\circ$;
- fig. 7 is a plot of $-T_{11}$;
- fig. 8: right central panel is a plot of $-T_{2M}^{\text{circ}}$. The two lower panels are replaced by



- fig. 14 is a plot of $-T_{22}^{\text{circ}}$, and fig. 15 of $-T_{21}^{\text{circ}}$;
- fig. 16 is a plot of $-T_{1,-1}^{\text{lin}}$, and fig. 18 of $-T_{11}^{\text{lin}}$;
- fig. 19 is a plot of $+T_{2,-2}^{\text{lin}}$, fig. 20 of $-T_{2,-1}^{\text{lin}}$, fig. 22 of $-T_{21}^{\text{lin}}$, and fig. 23 of $+T_{22}^{\text{lin}}$.

With these replacements, the numbering of figures as referenced in the text remains untouched. The conclusions remain unchanged. The corresponding *Mathematica* notebook, available from hgrie@gwu.edu, and the arXiv version have been corrected to implement these substitutions.

I also take the opportunity to correct the central values of two spin polarisabilities in eq. (43): $\gamma_{E1E1} = -5.0$ (replaces -5.3) and $\gamma_{M1M1} = 3.2$ (replaces 3.1).

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