# Calculation of Radiative Corrections

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## 1 Overview

Radiative Corrections (RCs) account for various radiative effects and higher-order scattering processes. They are necessary to obtain the theoretical Born asymmetry from the actually measurable one. In this note, we describe the actual process used to calculate the final RCs for E155.[1]

In the following, we will use the labels "radiated" (or "rad" for short) and "Born" to distinguish between the measurable quantity and the idealized one. A tag distinguishing the quantity as being either actual data ("meas") or a model value ("fit") is added whenever necessary.

Our standard counts-to-asymmetry equation

$$A_{\parallel}^{Born} = \left(\frac{N_{-} - N_{+}}{N_{-} + N_{+}}\right) \frac{C_N}{f P_b P_t f_{RC}} + A_{RC} \tag{1}$$

can be split into

$$A_{\parallel}^{radiated} = \left(\frac{N_{-} - N_{+}}{N_{-} + N_{+}}\right) \frac{C_N}{f P_b P_t} \tag{2}$$

and an RC term

$$A^{Born} = \frac{A^{radiated}}{f_{RC}} + A_{RC} \tag{3}$$

As these equations indicate, the radiative corrections are actually expressed in two terms, an additive one and a multiplicative one. This follows from statistical as well as conceptual considerations. One could argue that at least some of the radiative effects being corrected for take on the form of a dilution and should thus be corrected like other dilution factors (i.e. $f$ in eq. (1), above). A general form of RCs would then have both, a dilution and a non-dilution term, $f_{RC}$ and $A_{RC}$, respectively.

[1]The results quoted here are based on the E155 data obtained from Peter Bosted in September 1998. While those are not the final ones, they are the basis for the RCs used in the creation of the published E155 asymmetries (see appendix E).

Statistical arguments make use of the fact that only a multiplicative term *directly* relates the statistical error of the measured asymmetry to the error of the extracted Born asymmetry:

$$\delta A^{Born} \sim \frac{\delta A^{radiated}}{f_{RC}} \tag{4}$$

and an additive term is used to carry any correction outside this one-to-one relation.

We actually define $f_{RC}$ to make this a rigorous relationship and thus gain statistical independence between the measured $A^{radiated}_{meas}(x, Q^2)$ and the correction $A_{RC}(x, Q^2)$ at the same kinematics (see E155 tech note 59 [16]). This leads to the following condition:

$$1/f_{RC}(x, Q^2) = \frac{\delta A^{Born}_{fit}(x, Q^2)}{\delta A^{rad}_{fit}(x, Q^2)} \tag{5}$$

where the changes in the fit $\delta A_{fit}(x, Q^2)$ are due to a variation of $\delta A^{rad}_{meas}(x, Q^2)$ at the *same* kinematics.

The statistical error of the extracted Born asymmetry is then given by two independent terms, where $\sigma_{A_{RC}}$ carries the statistical information of all the *other* measured points:

$$\sigma^2_{Born}(x, Q^2) = \frac{\sigma^2_{rad}(x, Q^2)}{f^2_{RC}(x, Q^2)} + \sigma^2_{A_{RC}}(x, Q^2) \tag{6}$$

The actual calculation of the radiative corrections was done in a manner very similar to the approach used for E154 [13][18], using Linda Stuart's code RCSLACPOL to determine the overall correction

$$A_{diff} = A^{Born}_{fit} - A^{radiated}_{fit} \tag{7}$$

This code requires a model of the Born asymmetry for *all* kinematic regions, so a fit to the world's data had to be created.

Once $A_{diff}(x, Q^2)$ is known, this correction needs to be split into the additive and multiplicative term defined in eq. (3). This requires the independent definition of one of the two terms; the motivation for having two RC terms in the first place (see above) also suggests the definition for $f_{RC}$. This then leaves

$$A_{RC} = A^{Born}_{fit} - \frac{A^{rad}_{fit}}{f_{RC}} \tag{8}$$

To obtain the total statistical error, eq. (6), the statistical errors of all the data used in the global fit need to be propagated through the RC calculation, resulting in $\sigma_{A_{RC}}$. Also, the various models and assumptions that go into the calculation of the radiative corrections necessarily have systematic errors associated with them, which also need to be propagated out. Finally, the calculation of integrals requires that correlations between the point-to-point corrections be accounted for. The results of these calculations are tabulated in appendix H and in section 5, respectively.

## 2 Calculation of $A_{diff}$

As indicated above, the $A_{diff}$ values are calculated by the computer program RCSLACPOL, developed by Linda Stuart and based on the concepts and methods of Kuchto and Shumeiko [22]. A tech note by Linda is in development which will give details on the code, so we will give only an overview here.

| |
|---|
| Structure Function (elastic, resonance, DIS) |
| Spin Structure Function (elastic, resonance, DIS) |
| Elastic Nucleon Form Factor (el, mag) |
| H, D crossection |
| Pauli Suppression Factor |
| $R = \sigma_L/\sigma_T$ |
| Target Model (radiation lengths) |

Table 1: Models used by RCSLACPOL.

| |
|---|
| Lepton Vacuum Polarization |
| Hadron Vacuum Polarization |
| multiple Virtual Photon Exchanges ("V contribution", up to order $\alpha^3$) |
| Lepton Bremsstrahlung ("R contribution") |
| Multi-Soft-Photon Bremsstrahlung |
| Radiative Tails (elastic, quasi-elastic, resonance) |
| Peaking Approximation |

Table 2: Corrections and Approximations made by RCSLACPOL.

The code uses structure function, asymmetry and other models (see table 1) to calculate the asymmetry $A_{\|}^{Born} = \sigma_{Born}^{polarized}/\sigma_{Born}^{unpolarized}$. Corrections for various higher-order processes are then applied (table 2) and possible energy losses before and after scattering (utilizing Al Tobias' target model [17]) are integrated over, adding radiative tails from other kinematic regions. This gives the radiated asymmetry $A_{\|}^{rad} = \sigma_{rad}^{polarized}/\sigma_{rad}^{unpolarized}$ and the difference between them is $A_{diff} = A^{Born} - A^{rad}$.

One of the required inputs to RCSLACPOL is a model of $A_1$, the asymmetry we are measuring. Since our data significantly contribute to the world knowledge of this quantity, any fit used as a model should make use of them. This leaves us with the circular situation that we need RCs to correct our data but we need our (corrected) data to calculate RCs.

The logical approach, absent an analytical solution, is to iterate: First, we make a model of $A_1$ based on the *uncorrected* E155 data[2] together with the world data (table 3) and use these to calculate a first set of radiative corrections. These

[2]Another option would be to start with a fit to the world data *excluding* ours but that has the potential of introducing discontinuities into the process. Our approach is more consistent.

are applied to our data (using equation (3) and the approximation $\sigma_{A^{Born}} = \sigma_{A^{radiated}}/f_{RC}$) and a new, improved fit is made, which in turn is used to calculate a new, improved set of RCs. Iterating this procedure rapidly produces converged values (see appendix B).

| *Nucleon* | *Experiment* | *Publication* |
|---|---|---|
| Proton | E155* | (unpublished, see appendix E) |
| | E143* | Phys. Rev. **D58**, 112003 (1998) [4] |
| | E130* | Phys. Rev. Lett. **51**, 1135 (1983) [6] |
| | E80* | Phys. Rev. Lett. **41**, 70 (1978) [7] |
| | Hermes | Phys. Lett. **B442**, 484 (1998) [8] |
| | SMC | Phys. Rev. **D58**, 112001 (1998) [10] |
| | EMC | Nucl. Phys. **B328**, 1 (1989) [11] |
| Deuteron | E155* | (unpublished, see appendix E) |
| | E143* | Phys. Rev. **D58**, 112003 (1998) [4] |
| | SMC | Phys. Rev. **D58**, 112001 (1998) [10] |
| Neutron | E154* | Phys. Rev. Lett. **79**, 26 (1997) [3] |
| | E142 | Phys. Rev. **D54**, 6620 (1996) [5] (syst errors [14]) |
| | Hermes | Phys. Lett. **B404**, 383 (1997) [9] |

Table 3: Data Sets used in Fit. *Data Sets marked by * had radiative corrections (re)calculated.*

In the course of the iterative calculations (and also during portions of the determination of the systematic errors, section 4), a different definition of $f_{RC}$ from the one detailed here was used; because our definition is too computationally demanding, we utilized the dilution-based values determined by RCSLACPOL [13][18]. However, as is easily demonstrated using just the definition of our RCs (eq. (3)), $f_{RC}$ has no impact on the $\chi^2$ of the fit:[3]

$$\begin{aligned}
\chi^2 &= \sum \frac{\left[A^{Born}_{fit} - A^{Born}_{meas}\right]^2}{(\sigma^{Born}_{meas})^2} \\
&= \sum \frac{\left[(A^{rad}_{fit}/f_{RC} + A_{RC}) - (A^{rad}_{meas}/f_{RC} + A_{RC})\right]^2}{(\sigma^{rad}_{meas}/f_{RC})^2} \\
&= \sum \frac{\left[A^{rad}_{fit} - A^{rad}_{meas}\right]^2}{(\sigma^{rad}_{meas})^2}
\end{aligned}$$

One of the significant differences between this and the previous RC calculation is the fit used as $A_1$ model. Instead of treating proton, neutron and

[3]This is true for an analytic system; our numerical approach is only an approximation, so small differences are present.

deuteron asymmetries $A_1^p$, $A_1^n$ and $A_1^d$ as separate entities, we use the following relationship to connect them into one fit function ($\omega_D = 0.05$ is the D-state contribution in the 2-nucleon deuteron, $F_1^d$ is per nucleon):

$$A_1^d F_1^d = \frac{1}{2}\,(1 - \frac{3}{2}\omega_D)\,(A_1^p F_1^p + A_1^n F_1^n) \tag{9}$$

This lets us parameterize the proton and the neutron asymmetries with separate functions which together define the deuteron asymmetry. Using custom code, we now fit all three data sets *simultaneously*, using

$$A_1^p(x,Q^2) = x^\alpha(a + bx + cx^2)(1 + d/Q^2)$$

$$A_1^n(x,Q^2) = x^\beta(a' + b'x + c'x^2)(1 + d'/Q^2)$$

$$A_1^d(x,Q^2) = (1 - \frac{3}{2}\omega_D)\frac{A_1^p(x,Q^2)F_1^p(x,Q^2) + A_1^n(x,Q^2)F_1^n(x,Q^2)}{2F_1^d(x,Q^2)}$$

($F_1$ is the unpolarized structure function of the respective nucleon, and $\alpha$, $\beta$, $a, b, c, d$, $a', b', c', d'$ are fit parameter) and minimizing

$$\chi^2_{total} = \chi^2_p + \chi^2_n + \chi^2_d$$

This replaces three fits with a single fit to a much larger data set. To further increase the consistency of our calculation, we recalculate RCs for the other experiments wherever possible (see table 3). The results of the final, fully iterated fit are plotted in figures 2 through 4, and detailed in table 14, all in appendix E.

Our fit to the world data set also allowed us to check for systematic errors in any data set relative to the others. We added one more fit parameter per RC data set, defining it as a multiplicative correction to those data and keeping the other experiments data unchanged. This multiplicative term corresponds to a change in the target or beam polarization due to a systematic error in their determination. Since we are using this to check for systematic errors, we needed to account for the other experiments' systematic errors as well. The only reasonable way we could do this was to approximate the total error of each data point by adding statistical and systematic errors in quadrature. Details of this study and the results can be found in appendix F.

# 3 Calculation of $f_{RC}$ and Statistical Errors

The actual determination of $f_{RC}$ is different from previous approaches (see tech note 59 [16]), but follows the idea behind the E154 calculations. We define $f_{RC}$ so that it propagates each data point's statistical error through the RC calculation. This decouples the statistical error of the data point in question from the error of all the other points, which will necessarily be reflected in an error on $A_{RC}$.

Since our data enter into the RCs (via the fit) not only by defining the Born asymmetry but are also integrated over, the propagated statistical error cannot realistically be determined by analytic means. Instead, a numeric approach is used to determine how each data point impacts the correction. We achieve this using the following definition of $f_{RC}$, derived in Appendix A:

$$
\begin{aligned}
f_{RC}(x,Q^2) &= \frac{\sigma^2_{A^{rad}_{fit}}}{\mathrm{cov}(A^{Born}_{fit},\ A^{rad}_{fit})} \\
&= \frac{\left(\frac{\triangle A^{rad}_{fit}(x,Q^2)}{\triangle p_j}\right)\mathcal{E}_{ij}\left(\frac{\triangle A^{rad}_{fit}(x,Q^2)}{\triangle p_i}\right)}{\left(\frac{\triangle A^{Born}_{fit}(x,Q^2)}{\triangle p_j}\right)\mathcal{E}_{ij}\left(\frac{\triangle A^{rad}_{fit}(x,Q^2)}{\triangle p_i}\right)}
\end{aligned}
\tag{10}
$$

Here, the $p_i$ are the fit parameter and $\mathcal{E}$ is the fit's error matrix. This error matrix and the ratios are determined using finite variations of the fit parameter. Thus, $\triangle A^{Born}/\triangle p_i$ is obtained by changing $p_i$ by a fraction of its value and determining the resulting change in the model for $A^{Born}$.

Equation (10) is the one actually used; calculating the RCs for each individual data point many times over, once for each change of a parameter $p_i$, two long tables are generated, one for all the ratios $\triangle A^{Born}/\triangle p_i$ and one for $\triangle A^{radiated}/\triangle p_i$. Since we not only need the "first derivatives" indicated here, but also all second derivatives to calculate the error matrix, each table has $\frac{1}{2}N(N+3)+1$ entries for each data point ($N$ is the number of fit parameter; our 10 parameter result in 66 variations).[4] These extensive calculations are the reason this approach was not feasible during the initial iterations. Once those had converged, however, two iterations were carried out using this definition of $f_{RC}$ to obtain the final results, tables 21 through 26.

The combined statistical error of *all* data points was also determined using this variational approach, utilizing the error matrix and the definitions:

$$\sigma^2_{A_{RC}} = \left(\frac{\triangle A_{RC}}{\triangle p_j}\right)\mathcal{E}_{ij}\left(\frac{\triangle A_{RC}}{\triangle p_i}\right) \tag{11}$$

$$\sigma^2_{A^{Born}} = \frac{\sigma^2_{A^{rad}}}{f^2_{RC}} + \sigma^2_{A_{RC}} \tag{12}$$

Thus, per our definition of $f_{RC}$, the total statistical error of the corrected asymmetry $A^{Born}_{meas}$ is given by two independent terms, one propagating the corresponding radiated asymmetry's statistical error, and one accounting for the influence of the complete data set (except for the point in question). The small error in the $A_{RC}$'s implies partial cancellation of the statistical errors of the *other* data points in this latter term.

[4] See appendix C for the actual calculation of the derivatives, the error matrix and the final $f_{RC}$ values.

# 4 Determination of the Systematic Errors

Given a well defined statistical error, all that remains is a systematic error due to model uncertainties and other approximations. Since using a model necessarily means the true value or behaviour is unknown, the systematic error of our RCs needs to reflect the trustworthiness of the individual models used as well as the models' significance in the final result. We follow the (rather conservative) tradition of estimating these errors by looking at the spread in the results obtained by using several alternative models.

This means that we recalculate the RCs after replacing one model with a different one and then comparing the resulting corrections. For each type of model used in the RC calculation, we have at least one reasonable alternative[5] and we take the largest variation in the resulting RCs to be the error due to this model category. The errors due to the various categories are deemed independent and added in quadrature to give the total. To avoid artificially inflating the total error, we track positive and negative variations separately.

One of the most significant model errors is due to the DIS asymmetry model, which is our fit to the global $A_1$ data set. In an effort to reduce this systematic error, many different functional forms were examined and their behavior studied. Those selected for this error determination (and as the main fit) gave the best result in terms of minimizing the fit's $\chi^2$ without inflating the number of parameter and without introducing any discontinuities or obvious biases. They were also tested for the existence of local (false) minima and for stability. The terms handling the $x_{Bjorken}$ and the $Q^2$-dependence were treated separately, though some expressions with mixed $x_{Bjorken}$ and $Q^2$ terms were considered as well. The final results are tabulated in appendix D, where the source of the errors is given for each kinematic bin separately.

# 5 Integral RCs

When evaluating the integral, the correlations between the point-to-point RCs need to be taken into account. The requisite equations are derived in E155 Tech Note 59 [16]. We use the standard E155 method for the evaluation of the integral [12], except that we do not re-bin the data into the larger bins and we do not apply the "smoothing correction", as the difference is insignificant. Also, we used the $A_1$ fit while the published results were obtained using the fit to $g_1/F_1$ (see appendix E).

Since this work was undertaken while the analysis was still in progress, it was not possible to obtain consistent results utilizing the final measurements. Instead, the results quoted here are based upon the same self-consistent data set used for the other RC calculations. We are confident that the change in the data does not significantly impact the errors we determine here.

To evaluate the integral, first each data point is assigned to one of the standard 38 bins, spectrometer by spectrometer, and converted from $A_\parallel$ to $g_1/F_1$:

[5] See appendix D for a list of models and alternates.

$$
\begin{aligned}
g_1/F_1 &= \beta' A_{meas}^{Born} + \alpha' && (13)\\
\sigma_{g_1/F_1} &= \beta' \sigma_{A_{meas}^{Born}} && (14)
\end{aligned}
$$

with

$$
\begin{aligned}
\alpha' &= \frac{2Mx}{E + E'\cos\theta} \cdot \frac{g_2}{F_1} && (15)\\
\beta' &= \frac{\nu}{E + E'\cos\theta} \cdot \frac{1+\epsilon R}{1-\epsilon} && (16)
\end{aligned}
$$

The results from the three spectrometer are then averaged, weighed by the raw data's statistical error:

$$
\begin{aligned}
\overline{g_1/F_1} &= \frac{\sum \frac{g_1/F_1}{\sigma^2_{g_1/F_1}}}{\sum \frac{1}{\sigma^2_{g_1/F_1}}} && (17)\\
\overline{\sigma_{g_1/F_1}} &= \frac{1}{\sqrt{\sum \frac{1}{\sigma^2_{g_1/F_1}}}} && (18)
\end{aligned}
$$

and

$$
\overline{x} = \frac{\sum x/\sigma^2_{g_1/F_1}}{\sum 1/\sigma^2_{g_1/F_1}} \qquad \overline{Q^2} = \frac{\sum Q^2/\sigma^2_{g_1/F_1}}{\sum 1/\sigma^2_{g_1/F_1}}
$$

The averaged data points are now converted to $g_1$ and evolved to a common value of $Q_o^2 = 5GeV^2$ using an additive term based on the fit to $A_1$:

$$
\begin{aligned}
g_1(\overline{x}, Q_o^2) &= F_1(\overline{x}, Q_o^2)\left(\overline{g_1/F_1}(\overline{x}, \overline{Q^2}) - \frac{g_1^{fit}(\overline{x}, \overline{Q^2})}{F_1(\overline{x}, \overline{Q^2})} + \frac{g_1^{fit}(\overline{x}, Q_o^2)}{F_1(\overline{x}, Q_o^2)}\right) && (19)\\
\sigma_{g_1}(\overline{x}, Q_o^2) &= F_1(\overline{x}, Q_o^2)\, \overline{\sigma_{g_1/F_1}}(\overline{x}, \overline{Q^2}) && (20)
\end{aligned}
$$

Now the integral can be evaluated (see TN 59 [16]):

$$
\begin{aligned}
\Gamma_1^{meas}(Q_o^2) &= \sum g_1(\overline{x}, Q_o^2)\Delta x \\
&= \sum_k \beta_k \left(\frac{A_{meas}^{rad}(x_k)}{f_{RC}(k)} + A_{RC}(k)\right) + \alpha_k && (21)\\
\sigma^2_{\Gamma_1^{meas}(Q^2)} &= \sum_k \beta_k^2 \frac{\sigma^2_{A_{meas}^{rad}(x_k)}}{f_{RC}^2(k)} + 2\mathrm{cov}(\Sigma\beta A_{fit}^{Born},\ \Sigma\beta A_{RC}) - \sigma^2_{\Sigma\beta A_{RC}} && (22)
\end{aligned}
$$

where the summations over the bins include all three spectrometer and

$$\alpha_k = \Delta x_k F_1(\overline{x}, Q_o^2) \left( \alpha' \frac{1/\sigma^2_{g_1/F_1}}{\sum \frac{1}{\sigma^2_{g_1/F_1}}} + \frac{g_1^{fit}(\overline{x}, Q_o^2)}{F_1(\overline{x}, Q_o^2)} - \frac{g_1^{fit}(\overline{x}, \overline{Q^2})}{F_1(\overline{x}, \overline{Q^2})} \right) \quad (23)$$

$$\beta_k = \Delta x_k F_1(\overline{x}, Q_o^2)\, \beta' \frac{1/\sigma^2_{g_1/F_1}}{\sum \frac{1}{\sigma^2_{g_1/F_1}}} \quad (24)$$

with $\Delta x_k$ being the width of the $k^{th}$ bin and

$$\begin{aligned} \sigma^2_{\Sigma\beta A_{RC}} &= \frac{\partial(\Sigma\beta A_{RC})}{\partial p_i}\, \mathcal{E}_{ij}\, \frac{\partial(\Sigma\beta A_{RC})}{\partial p_j} \\ &\approx \frac{\Delta(\Sigma\beta A_{RC})}{\Delta p_i}\, \mathcal{E}_{ij}\, \frac{\Delta(\Sigma\beta A_{RC})}{\Delta p_j} \quad (25) \\ \text{cov}(\Sigma\beta A_{fit}^{Born},\ \Sigma\beta A_{RC}) &= \frac{\partial(\Sigma\beta A_{fit}^{Born})}{\partial p_i}\, \mathcal{E}_{ij}\, \frac{\partial(\Sigma\beta A_{RC})}{\partial p_j} \\ &\approx \frac{\Delta(\Sigma\beta A_{fit}^{Born})}{\Delta p_i}\, \mathcal{E}_{ij}\, \frac{\Delta(\Sigma\beta A_{RC})}{\Delta p_j} \quad (26) \end{aligned}$$

Table 4 compares the results using different evolution methods and gives the components of the statistical error, based on equation (22). In addition to the standard[6] method detailed here ("$g_1/F_1$ add"), a similar *multiplicative* method was used ("$g_1/F_1$ multi"), as well as two approaches which, utilizing the fit, individually evolve each data point to the common $Q_o^2 = 5\,GeV^2$, before combining the spectrometer. One uses an additive $g_1$ term ("$g_1^{fit}$ add"), while the other ("$A_1^{fit}$ multi") multiplies by the ratio $A_1^{fit}(x, Q_o^2)/A_1^{fit}(x, Q^2_{meas})$ .

The systematic error of the integral due to the radiative corrections was determined using the same approach as the point-to-point data, by recalculating the integral with each model variation and finding the largest difference from the nominal result. The model variations and their categories are identical to those of the point-to-point results (see appendix D). The results are detailed in tables 5 and 6.

[6] Motivations for this choice include that $g_1/F_1$ is most closely related to the actual quantity measured, and it has only a small $Q^2$ dependence which minimizes the evolution error. While multiplicative corrections also scale the statistical errors, additive corrections leave them unchanged.

| | *Method* | *Integral* | $\sigma^2_{data}$ | $\sigma^2_{\Sigma\beta A_{RC}}$ | *cov* |
|---|---|---|---|---|---|
| P | $g_1/F_1$ add | 0.1214 ± 0.0022 | .500E-05 | .594E-07 | -.658E-07 |
| P | $g_1/F_1$ multi | 0.1249 ± 0.0022 | .500E-05 | .594E-07 | -.658E-07 |
| P | $g_1^{fit}$ add | 0.1215 ± 0.0017 | .298E-05 | .479E-07 | -.270E-07 |
| P | $A_1^{fit}$ multi | 0.1219 ± 0.0023 | .536E-05 | .625E-07 | -.589E-07 |
| D | $g_1/F_1$ add | 0.0373 ± 0.0030 | .920E-05 | .345E-07 | -.220E-07 |
| D | $g_1/F_1$ multi | 0.0399 ± 0.0030 | .920E-05 | .345E-07 | -.220E-07 |
| D | $g_1^{fit}$ add | 0.0394 ± 0.0023 | .541E-05 | .249E-07 | -.160E-07 |
| D | $A_1^{fit}$ multi | 0.0376 ± 0.0031 | .976E-05 | .391E-07 | -.109E-07 |

Table 4: Integrals over measured region and breakdown of the statistical error. *See text for definition of the different integrations.*

| Category | | $g_1/F_1$ add | $g_1/F_1$ multi | $g_1^{fit}$ add | $A_1^{fit}$ multi |
|---|---|---|---|---|---|
| **Integral** | | 0.1214 | 0.1249 | 0.1215 | 0.1219 |
| $\mathrm{DIS}_x$ | + | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| | - | 0.0006 | 0.0004 | 0.0003 | 0.0005 |
| $\mathrm{DIS}_{Q^2}$ | + | 0.0006 | 0.0000 | 0.0000 | 0.0003 |
| | - | 0.0007 | 0.0010 | 0.0009 | 0.0010 |
| SF | + | 0.0028 | 0.0029 | 0.0029 | 0.0029 |
| | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| $g_2$ | + | 0.0030 | 0.0000 | 0.0030 | 0.0027 |
| | - | 0.0000 | 0.0002 | 0.0000 | 0.0000 |
| Target | + | 0.0002 | 0.0002 | 0.0001 | 0.0002 |
| | - | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| FF | + | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ResAsy | + | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | - | 0.0004 | 0.0004 | 0.0003 | 0.0004 |
| Peaking | + | 0.0015 | 0.0015 | 0.0014 | 0.0015 |
| | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other | + | 0.0003 | 0.0003 | 0.0003 | 0.0003 |
| | - | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| **Total** | + | 0.0045 | 0.0033 | 0.0044 | 0.0043 |
| | - | 0.0011 | 0.0012 | 0.0010 | 0.0012 |

Table 5: Systematic error to the proton integral over the measured region due to radiative corrections.

| Category | | $g_1/F_1$ add | $g_1/F_1$ multi | $g_1^{fit}$ add | $A_1^{fit}$ multi |
|---|---|---|---|---|---|
| | **Integral** | 0.0373 | 0.0399 | 0.0394 | 0.0376 |
| DIS$_x$ | + | 0.0002 | 0.0002 | 0.0011 | 0.0003 |
| | - | 0.0003 | 0.0002 | 0.0002 | 0.0002 |
| DIS$_{Q^2}$ | + | 0.0012 | 0.0000 | 0.0020 | 0.0008 |
| | - | 0.0000 | 0.0003 | 0.0000 | 0.0000 |
| SF | + | 0.0013 | 0.0008 | 0.0029 | 0.0045 |
| | - | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| $g_2$ | + | 0.0013 | 0.0000 | 0.0027 | 0.0012 |
| | - | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| PS | + | 0.0003 | 0.0003 | 0.0003 | 0.0008 |
| | - | 0.0001 | 0.0001 | 0.0000 | 0.0001 |
| Target | + | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| FF | + | 0.0001 | 0.0001 | 0.0000 | 0.0005 |
| | - | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| ResAsy | + | 0.0000 | 0.0001 | 0.0000 | 0.0003 |
| | - | 0.0002 | 0.0002 | 0.0002 | 0.0004 |
| Peaking | + | 0.0005 | 0.0005 | 0.0005 | 0.0005 |
| | - | 0.0000 | 0.0000 | 0.0001 | 0.0000 |
| Other | + | 0.0000 | 0.0001 | 0.0000 | 0.0002 |
| | - | 0.0002 | 0.0003 | 0.0001 | 0.0004 |
| **Total** | + | 0.0023 | 0.0011 | 0.0046 | 0.0049 |
| | - | 0.0004 | 0.0005 | 0.0003 | 0.0006 |

Table 6: Systematic error to the deuteron integral over the measured region due to radiative corrections.

# A Derivation of the Definition of $f_{RC}$

We want to define $f_{RC}$ in terms of the statistical dependence of the radiated and Born models on the experimental data:

$$\left(\frac{\partial A_{fit}^{Born}(x,Q^2)}{\partial A_{measured}(x,Q^2)}\right) = \frac{1}{f_{RC}(x,Q^2)} \left(\frac{\partial A_{fit}^{radiated}(x,Q^2)}{\partial A_{measured}(x,Q^2)}\right) \tag{27}$$

Note that this necessarily means, based on eq. (3), that

$$\frac{\partial A_{RC}(x,Q^2)}{\partial A_{measured}(x,Q^2)} = 0$$

though this is not the case for $\frac{\partial A_{RC}(x',Q'^2)}{\partial A_{measured}(x,Q^2)}$ with $(x',Q'^2) \neq (x,Q^2)$, thus separating the direct, local influence from the overall (global) ones.

To actually be able to calculate this, we have to use an indirect approach, via the fit parameter $p_i$:

$$f_{RC}(x,Q^2) = \frac{\sum_i \left(\frac{\partial A_{fit}^{rad}(x,Q^2)}{\partial p_i}\right)\left(\frac{\partial p_i}{\partial A_{meas}(x,Q^2)}\right)}{\sum_i \left(\frac{\partial A_{fit}^{Born}(x,Q^2)}{\partial p_i}\right)\left(\frac{\partial p_i}{\partial A_{meas}(x,Q^2)}\right)} \tag{28}$$

We can now evaluate the ratios $\partial A_{fit}^{radiated}/\partial p_i$ and $\partial A_{fit}^{Born}/\partial p_i$, i.e. the dependence of the respective model on the individual fit parameter, if we approximate the partial derivatives with ratios of small variations:

$$\frac{\partial A_{fit}^{radiated}}{\partial p_i} \approx \frac{\triangle A_{fit}^{radiated}}{\triangle p_i}$$

However, the ratio $\partial p_i/\partial A_{measured}$ cannot easily be calculated this way. Instead, we express it in terms of the fit's error matrix. To obtain the requisite expression, we need to go back to the definitions

$$\chi^2 = \sum_m \frac{(f_m - y_m)^2}{\sigma_m^2} \tag{29}$$

$$\mathcal{E}_{ij}^{-1} = \frac{1}{2}\,\frac{\partial \chi^2}{\partial p_i\,\partial p_j} \tag{30}$$

Here, the sum is over all the data used in making the fit; $y_m$, $\sigma_m$ and $f_m$ are the data points, their statistical errors, and the corresponding fit values, respectively; $p_i$ are the fit parameter; $\chi^2$ is minimized by the fit; and $\mathcal{E}_{ij}^{-1}$ is element $(i,j)$ of the *inverse* of the fit's error matrix $\mathcal{E}$. Note that for a reasonable fit, the error matrix is symmetric so that $\mathcal{E}_{ij} = \mathcal{E}_{ji}$.

We can now take the partial derivative

$$\left(\frac{\partial \chi^2}{\partial p_i}\right) = 2\sum_m \left(\frac{f_m - y_m}{\sigma_m^2}\right)\left(\frac{\partial f_m}{\partial p_i}\right) = 0 \tag{31}$$

which is the condition for $\chi^2$ being at a minimum.

Now, assume the data point in question were actually slightly different, a reasonable approach considering the meaning of a statistical error. The change of this data point $y(x,Q^2)$ would result in a change in the above derivative, which would have to be matched by corresponding changes in the fit parameter $\delta p_\ell$ to again meet the condition for a minimum. Thus,

$$\sum_\ell \frac{\partial}{\partial p_\ell}\left(\frac{\partial\chi^2}{\partial p_i}\right)\delta p_\ell = -\frac{\partial}{\partial y}\left(\frac{\partial\chi^2}{\partial p_i}\right)\delta y(x,Q^2) \tag{32}$$

Using definition eq. (30) and some algebra, we get

$$\frac{\delta y(x,Q^2)}{\sigma^2(x,Q^2)}\left(\frac{\partial f(x,Q^2)}{\partial p_i}\right) = \frac{1}{2}\sum_\ell\left(\frac{\partial^2\chi^2}{\partial p_i\,\partial p_\ell}\right)\delta p_\ell \tag{33}$$

$$= \sum_\ell \mathcal{E}_{i\ell}^{-1}\,\delta p_\ell \tag{34}$$

Multiplying both sides by the error matrix itself,

$$\sum_i \frac{\delta y(x,Q^2)}{\sigma^2(x,Q^2)}\,\mathcal{E}_{ij}\left(\frac{\partial f(x,Q^2)}{\partial p_i}\right) = \sum_{i,\ell}\mathcal{E}_{ij}\,\mathcal{E}_{i\ell}^{-1}\,\delta p_\ell \tag{35}$$

or

$$\frac{1}{\sigma^2(x,Q^2)}\sum_i \mathcal{E}_{ij}\left(\frac{\partial f(x,Q^2)}{\partial p_i}\right) = \frac{\delta p_j}{\delta y(x,Q^2)} \tag{36}$$

Substituting this expression into our definition of $f_{RC}$ (eq. 28) gives:

$$f_{RC}(x,Q^2) = \frac{\left(\frac{\partial A_{fit}^{rad}(x,Q^2)}{\partial p_j}\right)\mathcal{E}_{ij}\left(\frac{\partial f(x,Q^2)}{\partial p_i}\right)}{\left(\frac{\partial A_{fit}^{Born}(x,Q^2)}{\partial p_j}\right)\mathcal{E}_{ij}\left(\frac{\partial f(x,Q^2)}{\partial p_i}\right)} \tag{37}$$

We have made the sums over i and j implicit and utilized the fact that experimental data are independent of each other, i.e. $\delta y_m/\delta y_k = 1$ for m=k and 0 otherwise. The same approximation as used above can now be applied to evaluate the ratio $\partial f/\partial p_i$ and the error matrix $\mathcal{E}$.[7]

At this point, it should be noted that we have not made any assumption about which data $f$ is actually fitting, corrected or uncorrected. In the context of our RC calculation, fitting the corrected data ($A^{Born}$, "backward" fit) is the more obvious approach, but using a fit to the uncorrected data ($A^{radiated}$, "forward" fit) is more direct and thus preferable.

[7] Actually, the approximation is used to evaluate the ratios determining the inverse of the error matrix, see eq. 30. The error matrix is then obtained by inverting the resulting matrix of derivatives.

# B Iteration Process

Figure 1 depicts the iteration process. Set inside a circle is the iteration loop, with other data on the outside. Circles represent actual data sets on disk, the squares represent separate FORTRAN programs. The iterative process is facilitated by a web of shell scripts, which start by calculating $A_1$ using the new RCs and terminate in the submission of batch jobs to calculate new corrections. Table 7 shows the development of the RCs over the course of the iterations for a subset of the data. As can be seen, the data quickly approach their final values.

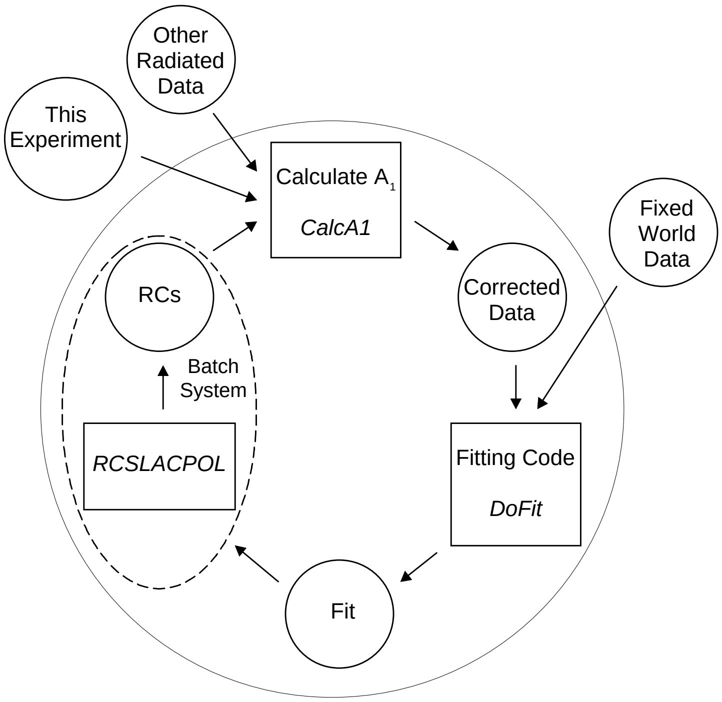


Figure 1: Calculation Sequence.

| | Iteration | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| $x_{Bj}$ | $Q^2$ | $f_{RC}$ | $A_{RC} * 100$ | | | | | | | |
| .057 | 4.0 | .594 | -4.541 | -4.547 | -4.813 | -4.781 | -4.789 | -4.788 | === | === |
| .063 | 4.4 | .622 | -4.615 | -4.619 | -4.838 | -4.811 | -4.818 | -4.817 | === | === |
| .071 | 4.8 | .652 | -4.642 | -4.644 | -4.801 | -4.778 | -4.784 | === | === | === |
| .080 | 5.3 | .681 | -4.623 | -4.625 | -4.729 | -4.709 | -4.714 | === | === | === |
| .090 | 5.8 | .711 | -4.541 | -4.543 | -4.604 | -4.587 | -4.591 | === | === | === |
| .101 | 6.3 | .741 | -4.385 | -4.387 | -4.417 | -4.403 | -4.406 | === | === | === |
| .113 | 6.9 | .768 | -4.192 | -4.195 | -4.207 | -4.194 | -4.195 | -4.196 | === | === |
| .128 | 7.4 | .794 | -3.942 | -3.947 | -3.946 | -3.934 | -3.935 | === | === | === |
| .144 | 8.0 | .818 | -3.653 | -3.659 | -3.652 | -3.640 | === | -3.641 | === | === |
| .161 | 8.6 | .841 | -3.331 | -3.339 | -3.311 | -3.299 | === | -3.300 | === | === |
| .182 | 9.2 | .863 | -2.942 | -2.950 | -2.935 | -2.924 | === | === | === | === |
| .205 | 9.9 | .883 | -2.540 | -2.550 | -2.532 | -2.521 | === | === | === | === |
| .230 | 10.5 | .903 | -2.115 | -2.124 | -2.105 | -2.095 | -2.094 | -2.095 | === | === |
| .259 | 11.1 | .921 | -1.673 | -1.682 | -1.661 | -1.653 | -1.652 | === | === | === |
| .292 | 11.7 | .938 | -1.247 | -1.255 | -1.232 | -1.227 | -1.225 | -1.226 | === | === |
| .328 | 12.3 | .954 | -.828 | -.835 | -.811 | -.808 | -.807 | === | === | === |
| .369 | 12.9 | .968 | -.461 | -.465 | -.440 | -.441 | -.440 | -.439 | -.440 | -.439 |
| .416 | 13.5 | .979 | -.146 | -.147 | -.122 | -.125 | -.124 | === | === | === |
| .468 | 14.1 | .989 | .115 | .116 | .141 | .134 | .135 | === | === | === |
| .526 | 14.6 | .996 | .295 | .298 | .323 | .313 | .314 | === | === | === |
| .592 | 15.1 | .999 | .379 | .384 | .409 | .397 | === | .398 | .397 | === |
| .666 | 15.9 | .999 | .380 | .386 | .409 | .396 | === | .397 | .396 | === |
| .749 | 16.0 | .999 | .325 | .331 | .352 | .339 | === | .340 | === | === |
| .844 | 16.4 | .995 | .155 | .160 | .175 | .165 | .166 | === | === | === |

Table 7: Sample Iteration History: 5.5$^o$ Proton RCs. *If the value did not change from the previous iteration, "===" is used for emphasis. Note the factor 100 and the use of the working definition of* $f_{RC}$.

# C Variational Calculations

Each change of a fit parameter requires a separate calculation of *all* RCs. To obtain all required derivatives for our 10-parameter-fit, 66 RC calculations are required for each iteration, including the calculation of the nominal values.

To facilitate this, a tcl/tk script creates a directory for each parameter variation, determines the correct parameter values (given the nominal values and the size of the changes), sets up the environment for a special version of RCSLACPOL, and submits jobs to the batch system. The jobs are executed in a mixed serial/parallel fashion, so as to minimize calculation time without monopolizing the batch system. The version of RCSLACPOL used here outputs the model values only, and with more digits.

Once all jobs are completed, another script takes the individual RC files and compiles them into 2 tables, listing the radiated and Born values, respectively. The individual results and setup files are then deleted, together with their directories, to conserve disk space.

These files, together with the raw data files also used for the fit and the fit parameter values and their changes, are then used by a FORTRAN program which determines the derivatives, the error matrix and all the derived gradients and errors, including integral results.

The numerical determination of the derivatives is detailed in the following: Let us define (with $i \neq j$)

$$\left.\begin{array}{c} f \\ f_i^+ \\ f_i^- \\ f_{ij} \end{array}\right\} \text{to mean } f(x,Q^2) \text{ with fit parameter} \left\{\begin{array}{l} p_1,...p_n \\ p_1,...(p_i+\delta),...p_n \\ p_1,...(p_i-\delta),...p_n \\ p_1,...(p_i+\delta_i), \\ \quad ...(p_j+\delta_j),...p_n \end{array}\right.$$

Now we can make the approximations

$$\frac{\partial f}{\partial p_i} \approx \frac{\triangle f}{\triangle p_i} \approx \frac{f_i^+ - f}{\delta_i} \approx \frac{f - f_i^-}{\delta_i} \approx \frac{f_i^+ - f_i^-}{2\,\delta_i}$$

$$\frac{\partial^2 f}{\partial p_i^2} \approx \frac{\triangle(\partial f/\partial p_i)}{\triangle p_i} \approx \frac{(f_i^+ - f) - (f - f_i^-)}{\delta_i^2} = \frac{f_i^+ + f_i^- - 2f}{\delta_i^2}$$

$$\frac{\partial^2 f}{\partial p_i\,\partial p_j} \approx \frac{\triangle(\partial f/\partial p_i)}{\triangle p_j} \approx \frac{(f_{ij} - f_j^+) - (f_i^+ - f)}{\delta_i\,\delta_j} = \frac{f_{ij} + f - f_j^+ - f_i^+}{\delta_i\,\delta_j}$$

The matrix of 2nd derivatives $\mathcal{D}$ is defined as

$$\mathcal{D}_{ij} = \frac{\partial^2 f}{\partial p_i\,\partial p_j}$$

using the above expressions and the error matrix is simply $\mathcal{E} = \frac{1}{2}\,\mathcal{D}^{-1}$.

Now $f_{RC}$ is given by equation (10) and $\sigma_{A_{RC}}$ by (11). The integral errors are determined the same way, using the gradients of $\sum \beta A_{RC}$ and $\sum \beta A_{Born}$ with equations (25) and (26).

## D Systematic Errors (Models and Alternates)

The following are the categories which were used to determine the systematic error, as outlined in section 4. In each category, the first model listed is the one used to calculate the nominal RC values. "DIS" refers to the kinematic region considered to be deeply inelastic, "RES" to the resonance region (we define the boundary to be at $W^2 = 4.3\,\mathrm{GeV}^2$). The numerical results of the systematic error determination are in tables 8 through 13; all values are changes to $A_{diff}$, and are thus directly applicable to $A_{\parallel}$.

**$\mathbf{DIS_x}$** Global DIS $A_1$ Fit – $x_{Bj}$ dependence

$A_1(x,Q^2) = (1 + d/Q^2)\, x^\alpha (a + bx + cx^2)$
$A_1(x,Q^2) = (1 + d/Q^2)\, x^\alpha (a + bx + cx^2)$, constraint: $A_1 \to 1$ as $x \to 1$
$A_1(x,Q^2) = (1 + d/Q^2)\, x^\alpha (a + bx)$
default fit, increased by its statistical error
default fit, decreased by its statistical error

**$\mathbf{DIS_{Q^2}}$** Global DIS $A_1$ Fit – $Q^2$ dependence

$A_1(x,Q^2) = x^\alpha (a + bx + cx^2)(1 + d/Q^2)$
$A_1(x,Q^2) = x^\alpha (a + bx + cx^2)(1 + d\log Q^2)$
$A_1(x,Q^2) = x^\alpha (a + bx + cx^2)$, i.e. no $Q^2$ dependence
$A_1(x,Q^2) = x^\alpha (a + bx + cx^2)\left(1 + \frac{d+ex+fx^2}{Q^2}\right)$

**SF** Unpolarized Structure Functions

use NMC fit to $F_2$ [21] for DIS, Bodek fit in RES
use F2GLOB [15] instead of NMC
use H2MODEL instead of fit by A. Bodek (p only)
extrapolate DIS model instead of using RES model
increase model value by model's own error ($F_2$, R)

**$\mathbf{g_2}$** Spin Structure Function $g_2$

$g_2 = g_2^{WW}$ [20]
$g_2 = 0$
$A_\perp = 0$

**PS** Pauli Suppression Factor Models (deuteron only)

| | |
|---|---|
| Tsai [23, eq. B54] | |
| Stein | increased Fermi momentum |
| VanOrden | decreased Fermi momentum |
| deForest [24] | no suppression |

**Target** Target Model variations

nominal model values
increase number of radiation lengths by 5%
decrease number of radiation lengths by 5%

**FF** Elastic Nucleon Form Factor

DIPOLE for $G_m^p$, $G_m^n$; GK [25] for $G_e^p$; $G_e^n$=0.0
HOHLER1 for $G_m^p$, $G_e^n$; IJL [26] for $G_e^p$, KK [27] for $G_m^n$
HOHLER2 for $G_m^p$, $G_e^p$, $G_e^n$; fit to NE11 data for $G_m^n$
GK [25] for $G_m^p$, $G_e^p$, $G_m^n$; GALSTER for $G_e^n$
DIPOLE for $G_m^p$; IJL [26] for $G_e^p$; BZ [28] for $G_m^n$, $G_e^n$

**ResAsy** Resonance Asymmetry Models

fit to E143 data, using AO parameterization
fit to E143 data (old)
extrapolation of DIS fit

**Peaking** Usage of Peaking Approximation

used for internal and external RCs
used for internal RCs only
used for external RCs only

**Other** Various Assumptions

normal (none of the below)
increase integration step size
Bremsstrahlung: target consists of $^1$H only
old integration code (external corrections)
correct for multi-soft photon emission

| $x_{Bj}$ | $Q^2$ | $A_{diff}$ | $\sigma^{syst}_{total}$ | $DIS_x$ | $DIS_{Q^2}$ | SF | $g_2$ | Target | FF | ResAsy | Peaking | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.014 | 1.0 | 1.274 | 0.108 | 0.095 | 0.000 | 0.029 | 0.001 | 0.022 | 0.008 | 0.000 | 0.029 | 0.019 |
| | | | -0.436 | -0.317 | -0.172 | -0.207 | -0.006 | -0.021 | 0.000 | -0.124 | 0.000 | -0.037 |
| 0.015 | 1.1 | 1.269 | 0.107 | 0.091 | 0.000 | 0.029 | 0.002 | 0.021 | 0.008 | 0.000 | 0.039 | 0.019 |
| | | | -0.409 | -0.300 | -0.189 | -0.159 | -0.005 | -0.020 | 0.000 | -0.122 | 0.000 | -0.037 |
| 0.017 | 1.2 | 1.240 | 0.106 | 0.085 | 0.000 | 0.026 | 0.001 | 0.020 | 0.008 | 0.000 | 0.050 | 0.021 |
| | | | -0.377 | -0.278 | -0.202 | -0.089 | -0.006 | -0.021 | 0.000 | -0.118 | 0.000 | -0.037 |
| 0.019 | 1.3 | 1.181 | 0.108 | 0.078 | 0.000 | 0.023 | 0.000 | 0.020 | 0.008 | 0.000 | 0.061 | 0.029 |
| | | | -0.347 | -0.251 | -0.209 | -0.012 | -0.008 | -0.020 | 0.000 | -0.109 | 0.000 | -0.036 |
| 0.022 | 1.5 | 1.107 | 0.126 | 0.070 | 0.000 | 0.064 | 0.000 | 0.016 | 0.008 | 0.000 | 0.071 | 0.038 |
| | | | -0.323 | -0.221 | -0.210 | -0.011 | -0.011 | -0.020 | 0.000 | -0.098 | 0.000 | -0.034 |
| 0.024 | 1.6 | 1.006 | 0.158 | 0.061 | 0.000 | 0.112 | 0.000 | 0.019 | 0.007 | 0.000 | 0.079 | 0.046 |
| | | | -0.294 | -0.190 | -0.204 | -0.011 | -0.014 | -0.020 | 0.000 | -0.084 | 0.000 | -0.032 |
| 0.027 | 1.7 | 0.934 | 0.169 | 0.054 | 0.000 | 0.125 | 0.000 | 0.020 | 0.008 | 0.000 | 0.087 | 0.044 |
| | | | -0.270 | -0.160 | -0.198 | -0.009 | -0.018 | -0.019 | 0.000 | -0.080 | 0.000 | -0.028 |
| 0.031 | 1.9 | 0.857 | 0.172 | 0.048 | 0.000 | 0.130 | 0.000 | 0.018 | 0.008 | 0.000 | 0.091 | 0.042 |
| | | | -0.245 | -0.131 | -0.188 | -0.008 | -0.022 | -0.018 | 0.000 | -0.077 | 0.000 | -0.024 |
| 0.035 | 2.0 | 0.769 | 0.168 | 0.041 | 0.000 | 0.123 | 0.000 | 0.016 | 0.008 | 0.000 | 0.094 | 0.046 |
| | | | -0.220 | -0.104 | -0.177 | -0.007 | -0.027 | -0.016 | 0.000 | -0.069 | 0.000 | -0.021 |
| 0.039 | 2.2 | 0.689 | 0.164 | 0.036 | 0.000 | 0.116 | 0.000 | 0.016 | 0.008 | 0.000 | 0.097 | 0.049 |
| | | | -0.197 | -0.078 | -0.166 | -0.006 | -0.031 | -0.014 | 0.000 | -0.059 | 0.000 | -0.018 |
| 0.044 | 2.4 | 0.612 | 0.149 | 0.029 | 0.000 | 0.098 | 0.000 | 0.016 | 0.006 | 0.000 | 0.097 | 0.046 |
| | | | -0.178 | -0.055 | -0.156 | -0.005 | -0.036 | -0.015 | 0.000 | -0.050 | 0.000 | -0.016 |
| 0.049 | 2.6 | 0.544 | 0.137 | 0.025 | 0.000 | 0.083 | 0.000 | 0.013 | 0.006 | 0.001 | 0.097 | 0.042 |
| | | | -0.160 | -0.033 | -0.145 | -0.005 | -0.039 | -0.013 | 0.000 | -0.040 | 0.000 | -0.014 |
| 0.056 | 2.8 | 0.475 | 0.126 | 0.021 | 0.000 | 0.066 | 0.000 | 0.012 | 0.005 | 0.006 | 0.095 | 0.042 |
| | | | -0.146 | -0.022 | -0.134 | -0.005 | -0.042 | -0.012 | 0.000 | -0.027 | 0.000 | -0.012 |
| 0.063 | 3.0 | 0.416 | 0.116 | 0.025 | 0.002 | 0.047 | 0.000 | 0.015 | 0.008 | 0.007 | 0.093 | 0.041 |
| | | | -0.135 | -0.018 | -0.124 | -0.011 | -0.044 | -0.006 | 0.000 | -0.018 | 0.000 | -0.011 |
| 0.071 | 3.2 | 0.367 | 0.108 | 0.035 | 0.004 | 0.037 | 0.000 | 0.010 | 0.004 | 0.008 | 0.089 | 0.032 |
| | | | -0.125 | -0.015 | -0.113 | -0.009 | -0.047 | -0.009 | 0.000 | -0.012 | 0.000 | -0.012 |
| 0.079 | 3.4 | 0.320 | 0.104 | 0.042 | 0.005 | 0.031 | 0.000 | 0.008 | 0.003 | 0.009 | 0.083 | 0.031 |
| | | | -0.116 | -0.012 | -0.103 | -0.007 | -0.049 | -0.008 | 0.000 | -0.008 | 0.000 | -0.008 |
| 0.089 | 3.6 | 0.283 | 0.099 | 0.047 | 0.005 | 0.026 | 0.000 | 0.008 | 0.003 | 0.007 | 0.077 | 0.028 |
| | | | -0.107 | -0.009 | -0.093 | -0.006 | -0.050 | -0.007 | 0.000 | -0.005 | 0.000 | -0.008 |
| 0.101 | 3.8 | 0.252 | 0.095 | 0.054 | 0.004 | 0.018 | 0.000 | 0.007 | 0.003 | 0.007 | 0.071 | 0.025 |
| | | | -0.100 | -0.007 | -0.084 | -0.006 | -0.052 | -0.007 | 0.000 | -0.002 | 0.000 | -0.006 |
| 0.113 | 4.0 | 0.229 | 0.090 | 0.058 | 0.003 | 0.014 | 0.000 | 0.006 | 0.001 | 0.006 | 0.063 | 0.021 |
| | | | -0.095 | -0.005 | -0.076 | -0.006 | -0.055 | -0.006 | 0.000 | -0.002 | 0.000 | -0.007 |
| 0.127 | 4.2 | 0.210 | 0.087 | 0.060 | 0.004 | 0.013 | 0.000 | 0.006 | 0.002 | 0.005 | 0.057 | 0.020 |
| | | | -0.089 | -0.002 | -0.067 | -0.005 | -0.057 | -0.005 | 0.000 | -0.001 | 0.000 | -0.007 |
| 0.143 | 4.4 | 0.196 | 0.080 | 0.058 | 0.007 | 0.010 | 0.000 | 0.006 | 0.002 | 0.005 | 0.050 | 0.019 |
| | | | -0.084 | 0.000 | -0.058 | -0.005 | -0.060 | -0.004 | 0.000 | 0.000 | 0.000 | -0.006 |
| 0.162 | 4.5 | 0.189 | 0.070 | 0.052 | 0.007 | 0.006 | 0.000 | 0.005 | 0.001 | 0.003 | 0.043 | 0.016 |
| | | | -0.083 | -0.003 | -0.051 | -0.006 | -0.064 | -0.005 | 0.000 | -0.001 | 0.000 | -0.009 |
| 0.182 | 4.7 | 0.183 | 0.059 | 0.043 | 0.008 | 0.006 | 0.000 | 0.004 | 0.001 | 0.003 | 0.036 | 0.015 |
| | | | -0.082 | -0.005 | -0.044 | -0.006 | -0.068 | -0.005 | 0.000 | 0.000 | 0.000 | -0.007 |
| 0.205 | 4.9 | 0.181 | 0.048 | 0.032 | 0.008 | 0.004 | 0.000 | 0.005 | 0.001 | 0.003 | 0.031 | 0.014 |
| | | | -0.080 | -0.007 | -0.036 | -0.005 | -0.070 | -0.004 | 0.000 | 0.000 | 0.000 | -0.008 |
| 0.230 | 5.0 | 0.183 | 0.036 | 0.018 | 0.008 | 0.003 | 0.000 | 0.005 | 0.001 | 0.003 | 0.026 | 0.013 |
| | | | -0.080 | -0.008 | -0.028 | -0.005 | -0.074 | -0.004 | 0.000 | 0.000 | 0.000 | -0.010 |
| 0.259 | 5.2 | 0.186 | 0.028 | 0.010 | 0.007 | 0.003 | 0.000 | 0.005 | 0.001 | 0.002 | 0.021 | 0.012 |
| | | | -0.087 | -0.018 | -0.034 | -0.005 | -0.077 | -0.004 | 0.000 | -0.001 | 0.000 | -0.010 |
| 0.292 | 5.3 | 0.192 | 0.024 | 0.011 | 0.006 | 0.003 | 0.000 | 0.004 | 0.001 | 0.000 | 0.017 | 0.010 |
| | | | -0.095 | -0.035 | -0.040 | -0.007 | -0.078 | -0.004 | 0.000 | -0.002 | 0.000 | -0.011 |
| 0.328 | 5.5 | 0.198 | 0.022 | 0.013 | 0.005 | 0.003 | 0.000 | 0.004 | 0.000 | 0.000 | 0.014 | 0.009 |
| | | | -0.103 | -0.051 | -0.044 | -0.007 | -0.077 | -0.004 | 0.000 | -0.002 | 0.000 | -0.013 |
| 0.369 | 5.6 | 0.207 | 0.021 | 0.015 | 0.002 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 | 0.011 | 0.009 |
| | | | -0.113 | -0.067 | -0.046 | -0.008 | -0.077 | -0.004 | 0.000 | -0.003 | 0.000 | -0.016 |
| 0.416 | 5.7 | 0.216 | 0.022 | 0.018 | 0.002 | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 | 0.008 | 0.009 |
| | | | -0.120 | -0.082 | -0.043 | -0.011 | -0.073 | -0.004 | 0.000 | -0.005 | 0.000 | -0.019 |
| 0.468 | 5.8 | 0.227 | 0.025 | 0.021 | 0.007 | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 | 0.008 | 0.007 |
| | | | -0.123 | -0.095 | -0.034 | -0.015 | -0.065 | -0.005 | 0.000 | -0.007 | 0.000 | -0.022 |
| 0.527 | 5.9 | 0.238 | 0.027 | 0.022 | 0.011 | 0.000 | 0.000 | 0.005 | 0.000 | 0.000 | 0.007 | 0.008 |
| | | | -0.121 | -0.102 | -0.018 | -0.023 | -0.052 | -0.005 | 0.000 | -0.010 | 0.000 | -0.025 |
| 0.593 | 6.0 | 0.262 | 0.029 | 0.021 | 0.015 | 0.001 | 0.000 | 0.005 | 0.001 | 0.000 | 0.009 | 0.008 |
| | | | -0.122 | -0.102 | -0.002 | -0.048 | -0.031 | -0.005 | 0.000 | -0.017 | 0.000 | -0.031 |
| 0.668 | 6.0 | 0.269 | 0.045 | 0.013 | 0.041 | 0.001 | 0.005 | 0.005 | 0.002 | 0.000 | 0.006 | 0.007 |
| | | | -0.115 | -0.082 | -0.005 | -0.062 | 0.000 | -0.005 | 0.000 | -0.039 | 0.000 | -0.034 |
| 0.751 | 6.1 | 0.061 | 0.337 | 0.015 | 0.047 | 0.332 | 0.006 | 0.001 | 0.005 | 0.034 | 0.004 | 0.001 |
| | | | -0.208 | -0.074 | -0.001 | 0.000 | 0.000 | -0.001 | -0.001 | -0.194 | 0.000 | -0.003 |
| 0.846 | 6.1 | -0.106 | 0.255 | 0.082 | 0.042 | 0.027 | 0.081 | 0.003 | 0.026 | 0.211 | 0.000 | 0.064 |
| | | | -0.159 | -0.031 | -0.011 | -0.155 | 0.000 | -0.003 | -0.004 | 0.000 | -0.009 | -0.004 |

Table 8: Source of RC systematic error in $2.75^o$ proton data.

| $x_{Bj}$ | $Q^2$ | $A_{diff}$ | $\sigma^{syst}_{total}$ | $DIS_x$ | $DIS_{Q^2}$ | SF | $g_2$ | Target | FF | ResAsy | Peaking | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.057 | 4.0 | 1.448 | 0.355 | 0.054 | 0.000 | 0.273 | 0.000 | 0.038 | 0.008 | 0.001 | 0.215 | 0.026 |
| | | | -0.386 | -0.054 | -0.352 | -0.013 | -0.066 | -0.039 | -0.004 | -0.116 | 0.000 | -0.052 |
| 0.063 | 4.4 | 1.288 | 0.344 | 0.064 | 0.000 | 0.235 | 0.000 | 0.037 | 0.019 | 0.012 | 0.235 | 0.043 |
| | | | -0.352 | -0.049 | -0.322 | -0.041 | -0.077 | -0.035 | -0.006 | -0.087 | 0.000 | -0.037 |
| 0.071 | 4.8 | 1.120 | 0.327 | 0.080 | 0.000 | 0.182 | 0.000 | 0.035 | 0.002 | 0.018 | 0.254 | 0.040 |
| | | | -0.334 | -0.044 | -0.308 | -0.036 | -0.087 | -0.034 | -0.007 | -0.060 | 0.000 | -0.033 |
| 0.080 | 5.3 | 0.945 | 0.316 | 0.094 | 0.000 | 0.126 | 0.000 | 0.033 | 0.002 | 0.023 | 0.269 | 0.033 |
| | | | -0.304 | -0.038 | -0.281 | -0.029 | -0.092 | -0.031 | -0.007 | -0.035 | 0.000 | -0.027 |
| 0.090 | 5.8 | 0.765 | 0.313 | 0.102 | 0.000 | 0.085 | 0.000 | 0.029 | 0.002 | 0.026 | 0.279 | 0.027 |
| | | | -0.276 | -0.033 | -0.253 | -0.023 | -0.093 | -0.028 | -0.010 | -0.014 | 0.000 | -0.024 |
| 0.101 | 6.3 | 0.599 | 0.314 | 0.115 | 0.008 | 0.061 | 0.000 | 0.024 | 0.001 | 0.020 | 0.283 | 0.025 |
| | | | -0.247 | -0.026 | -0.224 | -0.018 | -0.091 | -0.024 | -0.014 | -0.005 | 0.000 | -0.023 |
| 0.113 | 6.9 | 0.456 | 0.309 | 0.122 | 0.022 | 0.044 | 0.000 | 0.021 | 0.002 | 0.016 | 0.277 | 0.023 |
| | | | -0.219 | -0.019 | -0.198 | -0.015 | -0.085 | -0.020 | -0.015 | 0.000 | 0.000 | -0.020 |
| 0.128 | 7.4 | 0.325 | 0.301 | 0.124 | 0.031 | 0.030 | 0.000 | 0.018 | 0.007 | 0.014 | 0.267 | 0.036 |
| | | | -0.189 | -0.011 | -0.170 | -0.012 | -0.079 | -0.017 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.144 | 8.0 | 0.244 | 0.284 | 0.119 | 0.036 | 0.019 | 0.000 | 0.015 | 0.004 | 0.011 | 0.252 | 0.031 |
| | | | -0.167 | -0.005 | -0.149 | -0.011 | -0.073 | -0.014 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.161 | 8.6 | 0.206 | 0.264 | 0.111 | 0.040 | 0.010 | 0.000 | 0.014 | 0.011 | 0.011 | 0.235 | 0.013 |
| | | | -0.150 | -0.016 | -0.128 | -0.015 | -0.068 | -0.026 | -0.013 | 0.000 | 0.000 | -0.011 |
| 0.182 | 9.2 | 0.171 | 0.237 | 0.096 | 0.039 | 0.012 | 0.000 | 0.011 | 0.003 | 0.007 | 0.212 | 0.020 |
| | | | -0.128 | -0.007 | -0.109 | -0.008 | -0.065 | -0.006 | -0.001 | 0.000 | 0.000 | -0.001 |
| 0.205 | 9.9 | 0.165 | 0.207 | 0.075 | 0.038 | 0.006 | 0.000 | 0.010 | 0.003 | 0.006 | 0.188 | 0.021 |
| | | | -0.111 | -0.011 | -0.091 | -0.006 | -0.062 | -0.009 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.230 | 10.5 | 0.180 | 0.176 | 0.047 | 0.038 | 0.005 | 0.000 | 0.009 | 0.002 | 0.005 | 0.164 | 0.020 |
| | | | -0.098 | -0.015 | -0.075 | -0.005 | -0.060 | -0.008 | -0.010 | 0.000 | 0.000 | 0.000 |
| 0.259 | 11.1 | 0.209 | 0.149 | 0.019 | 0.042 | 0.006 | 0.000 | 0.009 | 0.002 | 0.004 | 0.140 | 0.018 |
| | | | -0.090 | -0.031 | -0.059 | -0.005 | -0.059 | -0.008 | 0.000 | 0.000 | 0.000 | -0.001 |
| 0.292 | 11.7 | 0.245 | 0.128 | 0.022 | 0.045 | 0.007 | 0.000 | 0.008 | 0.001 | 0.002 | 0.116 | 0.018 |
| | | | -0.101 | -0.068 | -0.045 | -0.004 | -0.058 | -0.008 | -0.007 | 0.000 | 0.000 | -0.001 |
| 0.328 | 12.3 | 0.285 | 0.116 | 0.028 | 0.050 | 0.008 | 0.000 | 0.008 | 0.003 | 0.002 | 0.098 | 0.018 |
| | | | -0.127 | -0.107 | -0.031 | -0.003 | -0.056 | -0.008 | -0.005 | 0.000 | 0.000 | -0.021 |
| 0.369 | 12.9 | 0.323 | 0.105 | 0.036 | 0.057 | 0.012 | 0.000 | 0.009 | 0.004 | 0.001 | 0.077 | 0.020 |
| | | | -0.158 | -0.147 | -0.017 | -0.002 | -0.053 | -0.007 | 0.000 | 0.000 | 0.000 | -0.008 |
| 0.416 | 13.5 | 0.357 | 0.110 | 0.044 | 0.066 | 0.006 | 0.000 | 0.008 | 0.002 | 0.000 | 0.073 | 0.019 |
| | | | -0.193 | -0.186 | -0.005 | -0.001 | -0.049 | -0.008 | -0.001 | 0.000 | 0.000 | -0.012 |
| 0.468 | 14.1 | 0.390 | 0.108 | 0.054 | 0.079 | 0.003 | 0.000 | 0.008 | 0.003 | 0.000 | 0.045 | 0.018 |
| | | | -0.227 | -0.222 | 0.000 | -0.002 | -0.043 | -0.008 | 0.000 | -0.001 | 0.000 | -0.019 |
| 0.526 | 14.6 | 0.414 | 0.119 | 0.060 | 0.096 | 0.001 | 0.000 | 0.008 | 0.001 | 0.000 | 0.032 | 0.015 |
| | | | -0.255 | -0.251 | 0.000 | -0.004 | -0.035 | -0.008 | 0.000 | -0.001 | 0.000 | -0.027 |
| 0.592 | 15.1 | 0.423 | 0.137 | 0.064 | 0.118 | 0.001 | 0.000 | 0.008 | 0.000 | 0.000 | 0.024 | 0.012 |
| | | | -0.276 | -0.273 | 0.000 | -0.005 | -0.023 | -0.008 | -0.001 | -0.002 | 0.000 | -0.034 |
| 0.666 | 15.6 | 0.408 | 0.155 | 0.063 | 0.140 | 0.001 | 0.000 | 0.007 | 0.000 | 0.000 | 0.016 | 0.009 |
| | | | -0.283 | -0.280 | 0.000 | -0.005 | -0.008 | -0.008 | -0.001 | -0.002 | 0.000 | -0.039 |
| 0.749 | 16.0 | 0.357 | 0.164 | 0.056 | 0.153 | 0.003 | 0.008 | 0.007 | 0.002 | 0.000 | 0.007 | 0.007 |
| | | | -0.259 | -0.256 | 0.000 | -0.004 | 0.000 | -0.006 | 0.000 | -0.001 | 0.000 | -0.041 |
| 0.844 | 16.4 | 0.234 | 0.131 | 0.032 | 0.125 | 0.003 | 0.018 | 0.004 | 0.011 | 0.000 | 0.002 | 0.003 |
| | | | -0.170 | -0.167 | 0.000 | -0.003 | 0.000 | -0.004 | 0.000 | -0.001 | -0.001 | -0.029 |

Table 9: Source of RC systematic error in 5.5$^o$ proton data.

| $x_{Bj}$ | $Q^2$ | $A_{diff}$ | $\sigma^{syst}_{total}$ | $\mathrm{DIS}_x$ | $\mathrm{DIS}_{Q^2}$ | SF | $g_2$ | Target | FF | ResAsy | Peaking | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.130 | 10.1 | 1.552 | 0.726 | 0.237 | 0.113 | 0.316 | 0.000 | 0.070 | 0.035 | 0.048 | 0.585 | 0.087 |
| | | | -0.533 | -0.049 | -0.452 | -0.040 | -0.246 | -0.067 | 0.000 | -0.093 | -0.029 | -0.041 |
| 0.145 | 11.2 | 1.227 | 0.741 | 0.229 | 0.149 | 0.235 | 0.000 | 0.064 | 0.030 | 0.044 | 0.638 | 0.076 |
| | | | -0.492 | -0.039 | -0.410 | -0.042 | -0.249 | -0.064 | -0.001 | -0.058 | -0.014 | -0.033 |
| 0.162 | 12.4 | 0.833 | 0.754 | 0.204 | 0.176 | 0.145 | 0.000 | 0.058 | 0.027 | 0.039 | 0.682 | 0.061 |
| | | | -0.432 | -0.022 | -0.355 | -0.042 | -0.232 | -0.056 | 0.000 | -0.025 | -0.002 | -0.025 |
| 0.182 | 13.7 | 0.474 | 0.764 | 0.167 | 0.193 | 0.067 | 0.000 | 0.051 | 0.020 | 0.032 | 0.713 | 0.046 |
| | | | -0.368 | -0.004 | -0.299 | -0.041 | -0.204 | -0.048 | 0.000 | -0.003 | 0.000 | -0.011 |
| 0.205 | 15.2 | 0.150 | 0.760 | 0.117 | 0.195 | 0.026 | 0.000 | 0.040 | 0.013 | 0.024 | 0.722 | 0.031 |
| | | | -0.302 | -0.013 | -0.244 | -0.036 | -0.169 | -0.039 | 0.000 | 0.000 | 0.000 | -0.005 |
| 0.230 | 16.7 | -0.109 | 0.730 | 0.064 | 0.182 | 0.028 | 0.000 | 0.030 | 0.009 | 0.016 | 0.702 | 0.031 |
| | | | -0.236 | -0.028 | -0.191 | -0.025 | -0.131 | -0.029 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.259 | 18.3 | -0.262 | 0.684 | 0.039 | 0.163 | 0.026 | 0.000 | 0.023 | 0.003 | 0.009 | 0.661 | 0.033 |
| | | | -0.193 | -0.078 | -0.144 | -0.018 | -0.099 | -0.022 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.291 | 20.0 | -0.315 | 0.632 | 0.050 | 0.143 | 0.024 | 0.000 | 0.018 | 0.003 | 0.008 | 0.612 | 0.026 |
| | | | -0.192 | -0.141 | -0.107 | -0.013 | -0.071 | -0.016 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.328 | 21.9 | -0.279 | 0.573 | 0.064 | 0.167 | 0.022 | 0.000 | 0.014 | 0.002 | 0.005 | 0.543 | 0.018 |
| | | | -0.233 | -0.215 | -0.073 | -0.011 | -0.048 | -0.013 | -0.001 | 0.000 | 0.000 | 0.000 |
| 0.369 | 23.8 | -0.183 | 0.520 | 0.081 | 0.204 | 0.019 | 0.000 | 0.012 | 0.001 | 0.004 | 0.471 | 0.019 |
| | | | -0.304 | -0.299 | -0.043 | -0.005 | -0.029 | -0.011 | -0.003 | 0.000 | 0.000 | 0.000 |
| 0.414 | 26.0 | -0.058 | 0.491 | 0.102 | 0.246 | 0.014 | 0.009 | 0.011 | 0.001 | 0.003 | 0.411 | 0.020 |
| | | | -0.392 | -0.391 | -0.017 | -0.001 | -0.014 | -0.010 | -0.004 | 0.000 | 0.000 | 0.000 |
| 0.464 | 28.3 | 0.116 | 0.467 | 0.126 | 0.291 | 0.008 | 0.020 | 0.012 | 0.001 | 0.001 | 0.341 | 0.024 |
| | | | -0.486 | -0.486 | 0.000 | -0.005 | 0.000 | -0.011 | -0.005 | 0.000 | 0.000 | 0.000 |
| 0.525 | 30.2 | 0.336 | 0.441 | 0.146 | 0.334 | 0.003 | 0.028 | 0.012 | 0.007 | 0.000 | 0.245 | 0.031 |
| | | | -0.573 | -0.573 | 0.000 | -0.012 | 0.000 | -0.012 | 0.000 | -0.002 | 0.000 | 0.000 |
| 0.590 | 32.5 | 0.507 | 0.456 | 0.162 | 0.379 | 0.004 | 0.037 | 0.014 | 0.007 | 0.000 | 0.188 | 0.032 |
| | | | -0.648 | -0.647 | 0.000 | -0.035 | 0.000 | -0.013 | -0.004 | -0.003 | 0.000 | -0.009 |
| 0.665 | 35.0 | 0.651 | 0.470 | 0.169 | 0.417 | 0.004 | 0.046 | 0.015 | 0.000 | 0.000 | 0.126 | 0.019 |
| | | | -0.712 | -0.708 | 0.000 | -0.058 | 0.000 | -0.015 | -0.015 | -0.004 | 0.000 | -0.035 |
| 0.743 | 37.2 | 0.691 | 0.467 | 0.161 | 0.428 | 0.007 | 0.050 | 0.014 | 0.000 | 0.000 | 0.079 | 0.020 |
| | | | -0.712 | -0.709 | 0.000 | -0.046 | 0.000 | -0.015 | -0.007 | -0.005 | 0.000 | -0.038 |
| 0.850 | 39.9 | 0.566 | 0.378 | 0.119 | 0.355 | 0.005 | 0.045 | 0.010 | 0.006 | 0.000 | 0.025 | 0.013 |
| | | | -0.552 | -0.549 | 0.000 | -0.016 | 0.000 | -0.011 | 0.000 | -0.004 | 0.000 | -0.051 |

Table 10: Source of RC systematic error in $10.5^o$ proton data.

| $x_{Bj}$ | $Q^2$ | $A_{diff}$ | $\sigma^{syst}_{total}$ | DIS$_x$ | DIS$_{Q^2}$ | SF | g$_2$ | PS | Target | FF | ResAsy | Peaking | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.014 | 1.0 | -0.729 | 0.115 | 0.068 | 0.000 | 0.002 | 0.000 | 0.087 | 0.003 | 0.021 | 0.000 | 0.000 | 0.024 |
| | | | -0.465 | -0.067 | -0.040 | -0.015 | -0.004 | -0.026 | -0.003 | 0.000 | -0.106 | -0.013 | -0.445 |
| 0.015 | 1.1 | -0.705 | 0.108 | 0.063 | 0.000 | 0.002 | 0.001 | 0.083 | 0.002 | 0.020 | 0.000 | 0.000 | 0.020 |
| | | | -0.131 | -0.064 | -0.046 | -0.013 | 0.000 | -0.024 | -0.003 | 0.000 | -0.088 | -0.006 | -0.048 |
| 0.017 | 1.2 | -0.671 | 0.100 | 0.057 | 0.000 | 0.002 | 0.000 | 0.078 | 0.002 | 0.020 | 0.000 | 0.002 | 0.018 |
| | | | -0.116 | -0.058 | -0.049 | -0.007 | -0.004 | -0.021 | -0.003 | 0.000 | -0.079 | -0.003 | -0.031 |
| 0.019 | 1.3 | -0.633 | 0.093 | 0.052 | 0.000 | 0.003 | 0.000 | 0.072 | 0.002 | 0.020 | 0.006 | 0.010 | 0.015 |
| | | | -0.104 | -0.055 | -0.051 | 0.000 | -0.005 | -0.018 | -0.003 | 0.000 | -0.065 | -0.003 | -0.025 |
| 0.022 | 1.5 | -0.593 | 0.089 | 0.048 | 0.000 | 0.008 | 0.000 | 0.066 | 0.002 | 0.019 | 0.019 | 0.018 | 0.012 |
| | | | -0.096 | -0.055 | -0.052 | 0.000 | -0.006 | -0.015 | -0.003 | 0.000 | -0.053 | -0.003 | -0.022 |
| 0.024 | 1.6 | -0.556 | 0.090 | 0.045 | 0.000 | 0.015 | 0.000 | 0.061 | 0.003 | 0.019 | 0.030 | 0.026 | 0.011 |
| | | | -0.088 | -0.052 | -0.052 | 0.000 | -0.006 | -0.011 | -0.002 | 0.000 | -0.042 | -0.002 | -0.019 |
| 0.027 | 1.7 | -0.506 | 0.084 | 0.041 | 0.000 | 0.017 | 0.000 | 0.054 | 0.003 | 0.017 | 0.031 | 0.029 | 0.009 |
| | | | -0.082 | -0.049 | -0.051 | 0.000 | -0.007 | -0.009 | -0.002 | 0.000 | -0.037 | -0.002 | -0.017 |
| 0.031 | 1.9 | -0.462 | 0.077 | 0.037 | 0.000 | 0.017 | 0.000 | 0.048 | 0.003 | 0.015 | 0.026 | 0.031 | 0.008 |
| | | | -0.079 | -0.045 | -0.050 | 0.000 | -0.009 | -0.007 | -0.003 | 0.000 | -0.037 | -0.003 | -0.016 |
| 0.035 | 2.0 | -0.424 | 0.072 | 0.034 | 0.000 | 0.016 | 0.000 | 0.043 | 0.003 | 0.014 | 0.024 | 0.033 | 0.007 |
| | | | -0.073 | -0.040 | -0.048 | 0.000 | -0.010 | -0.004 | -0.002 | 0.000 | -0.034 | -0.002 | -0.014 |
| 0.039 | 2.2 | -0.391 | 0.064 | 0.029 | 0.000 | 0.014 | 0.000 | 0.037 | 0.002 | 0.012 | 0.020 | 0.034 | 0.006 |
| | | | -0.069 | -0.035 | -0.047 | 0.000 | -0.012 | -0.004 | -0.003 | 0.000 | -0.031 | -0.003 | -0.014 |
| 0.044 | 2.4 | -0.365 | 0.059 | 0.026 | 0.000 | 0.012 | 0.000 | 0.032 | 0.003 | 0.010 | 0.017 | 0.035 | 0.006 |
| | | | -0.063 | -0.029 | -0.045 | 0.000 | -0.013 | -0.002 | -0.003 | 0.000 | -0.027 | -0.003 | -0.013 |
| 0.049 | 2.6 | -0.344 | 0.055 | 0.023 | 0.000 | 0.010 | 0.000 | 0.028 | 0.003 | 0.009 | 0.015 | 0.036 | 0.006 |
| | | | -0.057 | -0.023 | -0.043 | 0.000 | -0.015 | -0.001 | -0.003 | 0.000 | -0.022 | -0.003 | -0.012 |
| 0.056 | 2.8 | -0.324 | 0.052 | 0.021 | 0.000 | 0.008 | 0.000 | 0.024 | 0.003 | 0.008 | 0.014 | 0.036 | 0.006 |
| | | | -0.052 | -0.019 | -0.041 | 0.000 | -0.016 | -0.001 | -0.003 | 0.000 | -0.017 | -0.003 | -0.011 |
| 0.063 | 3.0 | -0.307 | 0.076 | 0.020 | 0.000 | 0.058 | 0.000 | 0.020 | 0.003 | 0.007 | 0.013 | 0.036 | 0.007 |
| | | | -0.048 | -0.015 | -0.039 | 0.000 | -0.017 | 0.000 | -0.003 | 0.000 | -0.013 | -0.003 | -0.011 |
| 0.071 | 3.2 | -0.291 | 0.070 | 0.019 | 0.000 | 0.052 | 0.000 | 0.017 | 0.003 | 0.006 | 0.012 | 0.036 | 0.007 |
| | | | -0.043 | -0.011 | -0.036 | 0.000 | -0.017 | 0.000 | -0.003 | 0.000 | -0.008 | -0.003 | -0.010 |
| 0.079 | 3.4 | -0.275 | 0.062 | 0.016 | 0.000 | 0.045 | 0.000 | 0.013 | 0.003 | 0.005 | 0.011 | 0.034 | 0.007 |
| | | | -0.043 | -0.008 | -0.035 | 0.000 | -0.019 | 0.000 | -0.003 | 0.000 | -0.006 | -0.004 | -0.010 |
| 0.089 | 3.6 | -0.259 | 0.056 | 0.014 | 0.000 | 0.040 | 0.000 | 0.010 | 0.003 | 0.005 | 0.010 | 0.032 | 0.008 |
| | | | -0.039 | -0.004 | -0.032 | 0.000 | -0.020 | 0.000 | -0.003 | 0.000 | -0.004 | -0.003 | -0.009 |
| 0.101 | 3.8 | -0.243 | 0.049 | 0.013 | 0.000 | 0.033 | 0.000 | 0.008 | 0.003 | 0.004 | 0.008 | 0.030 | 0.008 |
| | | | -0.039 | -0.001 | -0.031 | 0.000 | -0.021 | 0.000 | -0.003 | 0.000 | -0.003 | -0.003 | -0.008 |
| 0.113 | 4.0 | -0.226 | 0.044 | 0.018 | 0.001 | 0.027 | 0.000 | 0.006 | 0.003 | 0.003 | 0.007 | 0.027 | 0.008 |
| | | | -0.038 | -0.002 | -0.029 | -0.001 | -0.022 | 0.000 | -0.003 | 0.000 | -0.002 | -0.004 | -0.008 |
| 0.127 | 4.2 | -0.209 | 0.040 | 0.021 | 0.003 | 0.020 | 0.000 | 0.004 | 0.002 | 0.003 | 0.006 | 0.025 | 0.008 |
| | | | -0.037 | -0.004 | -0.027 | -0.001 | -0.024 | 0.000 | -0.003 | 0.000 | -0.002 | -0.003 | -0.007 |
| 0.143 | 4.4 | -0.190 | 0.037 | 0.024 | 0.004 | 0.013 | 0.000 | 0.003 | 0.002 | 0.002 | 0.005 | 0.022 | 0.008 |
| | | | -0.037 | -0.005 | -0.025 | -0.001 | -0.026 | 0.000 | -0.003 | 0.000 | -0.001 | -0.003 | -0.007 |
| 0.162 | 4.6 | -0.171 | 0.036 | 0.026 | 0.005 | 0.007 | 0.000 | 0.002 | 0.002 | 0.002 | 0.005 | 0.020 | 0.009 |
| | | | -0.037 | -0.010 | -0.022 | 0.000 | -0.027 | 0.000 | -0.002 | 0.000 | -0.001 | -0.002 | -0.005 |
| 0.182 | 4.7 | -0.150 | 0.034 | 0.026 | 0.006 | 0.002 | 0.000 | 0.002 | 0.002 | 0.002 | 0.004 | 0.018 | 0.009 |
| | | | -0.040 | -0.017 | -0.019 | 0.000 | -0.030 | 0.000 | -0.002 | 0.000 | 0.000 | -0.002 | -0.004 |
| 0.205 | 4.9 | -0.128 | 0.031 | 0.024 | 0.007 | 0.002 | 0.000 | 0.001 | 0.002 | 0.002 | 0.004 | 0.016 | 0.008 |
| | | | -0.044 | -0.024 | -0.017 | -0.004 | -0.032 | 0.000 | -0.002 | 0.000 | 0.000 | -0.001 | -0.003 |
| 0.230 | 5.0 | -0.104 | 0.026 | 0.020 | 0.006 | 0.002 | 0.000 | 0.000 | 0.001 | 0.001 | 0.003 | 0.013 | 0.007 |
| | | | -0.051 | -0.032 | -0.016 | -0.009 | -0.035 | 0.000 | -0.002 | 0.000 | -0.001 | -0.001 | -0.003 |
| 0.259 | 5.2 | -0.081 | 0.021 | 0.015 | 0.006 | 0.001 | 0.000 | 0.000 | 0.001 | 0.001 | 0.002 | 0.011 | 0.006 |
| | | | -0.060 | -0.040 | -0.019 | -0.012 | -0.038 | 0.000 | -0.002 | 0.000 | -0.001 | -0.001 | -0.002 |
| 0.292 | 5.3 | -0.058 | 0.021 | 0.016 | 0.006 | 0.001 | 0.000 | 0.000 | 0.001 | 0.001 | 0.002 | 0.010 | 0.006 |
| | | | -0.067 | -0.047 | -0.021 | -0.012 | -0.041 | 0.000 | -0.001 | 0.000 | -0.001 | 0.000 | -0.001 |
| 0.328 | 5.5 | -0.035 | 0.021 | 0.018 | 0.006 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.002 | 0.008 | 0.004 |
| | | | -0.074 | -0.055 | -0.023 | -0.011 | -0.043 | 0.000 | 0.000 | 0.000 | -0.001 | 0.000 | -0.001 |
| 0.370 | 5.6 | -0.012 | 0.022 | 0.020 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.002 | 0.006 | 0.002 |
| | | | -0.082 | -0.063 | -0.025 | -0.009 | -0.045 | 0.000 | 0.000 | 0.000 | -0.002 | 0.000 | -0.001 |
| 0.416 | 5.7 | 0.010 | 0.021 | 0.020 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.004 | 0.000 |
| | | | -0.087 | -0.070 | -0.025 | -0.005 | -0.045 | -0.001 | -0.001 | -0.001 | -0.003 | 0.000 | -0.001 |
| 0.468 | 5.8 | 0.032 | 0.021 | 0.020 | 0.003 | 0.001 | 0.000 | 0.000 | 0.000 | 0.002 | 0.001 | 0.004 | 0.000 |
| | | | -0.089 | -0.074 | -0.021 | -0.005 | -0.044 | -0.001 | -0.001 | 0.000 | -0.005 | 0.000 | -0.003 |
| 0.527 | 5.9 | 0.056 | 0.020 | 0.018 | 0.004 | 0.007 | 0.000 | 0.000 | 0.001 | 0.003 | 0.002 | 0.003 | 0.000 |
| | | | -0.087 | -0.075 | -0.014 | -0.008 | -0.039 | -0.001 | -0.001 | -0.001 | -0.008 | 0.000 | -0.006 |
| 0.593 | 6.0 | 0.091 | 0.019 | 0.014 | 0.006 | 0.009 | 0.000 | 0.000 | 0.001 | 0.004 | 0.002 | 0.003 | 0.001 |
| | | | -0.078 | -0.068 | -0.001 | -0.015 | -0.028 | -0.001 | -0.002 | -0.001 | -0.017 | 0.000 | -0.012 |
| 0.668 | 6.0 | 0.126 | 0.022 | 0.005 | 0.018 | 0.003 | 0.000 | 0.000 | 0.001 | 0.009 | 0.007 | 0.002 | 0.001 |
| | | | -0.068 | -0.044 | -0.003 | -0.030 | -0.005 | -0.001 | -0.002 | 0.000 | -0.038 | 0.000 | -0.017 |
| 0.752 | 6.1 | -0.058 | 0.098 | 0.018 | 0.022 | 0.005 | 0.000 | 0.000 | 0.001 | 0.023 | 0.089 | 0.000 | 0.019 |
| | | | -0.107 | -0.063 | 0.000 | -0.073 | -0.014 | 0.000 | -0.001 | 0.000 | -0.044 | -0.001 | -0.001 |
| 0.846 | 6.1 | -0.154 | 0.217 | 0.062 | 0.023 | 0.000 | 0.040 | 0.000 | 0.003 | 0.089 | 0.170 | 0.000 | 0.066 |
| | | | -0.135 | -0.021 | -0.007 | -0.133 | 0.000 | 0.000 | -0.003 | 0.000 | 0.000 | -0.005 | -0.002 |

Table 11: Source of RC systematic error in $2.75^o$ deuteron data.

| $x_{Bj}$ | $Q^2$ | $A_{diff}$ | $\sigma^{syst}_{total}$ | $DIS_x$ | $DIS_{Q^2}$ | SF | $g_2$ | PS | Target | FF | ResAsy | Peaking | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.057 | 4.0 | -0.610 | 0.163 | 0.047 | 0.000 | 0.054 | 0.000 | 0.102 | 0.001 | 0.025 | 0.042 | 0.093 | 0.001 |
| | | | -0.136 | -0.048 | -0.105 | -0.001 | -0.028 | -0.003 | -0.006 | 0.000 | -0.065 | -0.002 | -0.013 |
| 0.063 | 4.4 | -0.600 | 0.215 | 0.046 | 0.000 | 0.150 | 0.000 | 0.095 | 0.001 | 0.023 | 0.038 | 0.103 | 0.001 |
| | | | -0.126 | -0.040 | -0.101 | 0.000 | -0.032 | -0.001 | -0.007 | 0.000 | -0.053 | -0.002 | -0.012 |
| 0.071 | 4.8 | -0.595 | 0.204 | 0.043 | 0.000 | 0.136 | 0.000 | 0.087 | 0.000 | 0.020 | 0.034 | 0.111 | 0.001 |
| | | | -0.117 | -0.034 | -0.096 | 0.000 | -0.036 | -0.001 | -0.009 | 0.000 | -0.041 | -0.002 | -0.013 |
| 0.080 | 5.3 | -0.591 | 0.191 | 0.038 | 0.000 | 0.119 | 0.000 | 0.076 | 0.001 | 0.014 | 0.030 | 0.119 | 0.001 |
| | | | -0.107 | -0.026 | -0.090 | -0.001 | -0.039 | 0.000 | -0.012 | 0.000 | -0.028 | -0.003 | -0.014 |
| 0.090 | 5.8 | -0.590 | 0.183 | 0.032 | 0.000 | 0.106 | 0.000 | 0.067 | 0.001 | 0.013 | 0.028 | 0.126 | 0.001 |
| | | | -0.094 | -0.016 | -0.081 | -0.001 | -0.039 | 0.000 | -0.013 | 0.000 | -0.014 | -0.003 | -0.013 |
| 0.101 | 6.3 | -0.580 | 0.170 | 0.033 | 0.000 | 0.091 | 0.000 | 0.054 | 0.002 | 0.010 | 0.023 | 0.127 | 0.001 |
| | | | -0.085 | -0.007 | -0.073 | 0.000 | -0.038 | 0.000 | -0.014 | 0.000 | -0.007 | -0.003 | -0.014 |
| 0.113 | 6.9 | -0.567 | 0.159 | 0.041 | 0.005 | 0.076 | 0.000 | 0.044 | 0.003 | 0.007 | 0.018 | 0.125 | 0.001 |
| | | | -0.079 | -0.001 | -0.067 | 0.000 | -0.036 | 0.000 | -0.014 | 0.000 | -0.002 | -0.003 | -0.015 |
| 0.128 | 7.4 | -0.548 | 0.149 | 0.047 | 0.008 | 0.061 | 0.000 | 0.034 | 0.003 | 0.004 | 0.013 | 0.122 | 0.000 |
| | | | -0.074 | -0.004 | -0.061 | -0.001 | -0.035 | 0.000 | -0.015 | 0.000 | 0.000 | -0.004 | -0.016 |
| 0.144 | 8.0 | -0.523 | 0.142 | 0.053 | 0.012 | 0.046 | 0.000 | 0.027 | 0.004 | 0.001 | 0.010 | 0.119 | 0.001 |
| | | | -0.067 | -0.009 | -0.054 | 0.000 | -0.032 | 0.000 | -0.015 | -0.001 | 0.000 | -0.004 | -0.017 |
| 0.161 | 8.6 | -0.490 | 0.130 | 0.055 | 0.013 | 0.029 | 0.000 | 0.019 | 0.003 | 0.001 | 0.007 | 0.112 | 0.000 |
| | | | -0.067 | -0.020 | -0.049 | -0.001 | -0.031 | 0.000 | -0.018 | -0.002 | 0.000 | -0.005 | -0.018 |
| 0.182 | 9.2 | -0.456 | 0.122 | 0.056 | 0.014 | 0.013 | 0.000 | 0.014 | 0.003 | 0.008 | 0.005 | 0.105 | 0.003 |
| | | | -0.062 | -0.030 | -0.041 | -0.001 | -0.030 | 0.000 | -0.014 | 0.000 | 0.000 | -0.005 | -0.012 |
| 0.205 | 9.9 | -0.404 | 0.111 | 0.054 | 0.015 | 0.003 | 0.000 | 0.009 | 0.003 | 0.000 | 0.004 | 0.095 | 0.000 |
| | | | -0.070 | -0.047 | -0.038 | -0.003 | -0.029 | 0.000 | -0.013 | -0.002 | 0.000 | -0.004 | -0.014 |
| 0.230 | 10.5 | -0.355 | 0.101 | 0.048 | 0.015 | 0.005 | 0.000 | 0.006 | 0.004 | 0.004 | 0.003 | 0.086 | 0.012 |
| | | | -0.080 | -0.064 | -0.032 | -0.017 | -0.029 | 0.000 | -0.011 | 0.000 | 0.000 | -0.003 | -0.009 |
| 0.259 | 11.1 | -0.297 | 0.088 | 0.038 | 0.015 | 0.004 | 0.000 | 0.004 | 0.003 | 0.008 | 0.003 | 0.076 | 0.012 |
| | | | -0.096 | -0.082 | -0.027 | -0.029 | -0.029 | 0.000 | -0.009 | -0.003 | 0.000 | -0.002 | -0.008 |
| 0.292 | 11.7 | -0.235 | 0.077 | 0.036 | 0.014 | 0.002 | 0.000 | 0.002 | 0.001 | 0.002 | 0.001 | 0.065 | 0.012 |
| | | | -0.115 | -0.102 | -0.022 | -0.037 | -0.031 | 0.000 | -0.009 | 0.000 | 0.000 | -0.002 | -0.006 |
| 0.328 | 12.4 | -0.170 | 0.072 | 0.042 | 0.014 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 | 0.055 | 0.014 |
| | | | -0.134 | -0.123 | -0.016 | -0.039 | -0.032 | 0.000 | -0.007 | -0.004 | 0.000 | -0.002 | -0.006 |
| 0.370 | 13.0 | -0.109 | 0.069 | 0.049 | 0.014 | 0.001 | 0.000 | 0.001 | 0.002 | 0.002 | 0.001 | 0.046 | 0.010 |
| | | | -0.151 | -0.143 | -0.010 | -0.034 | -0.031 | 0.000 | -0.004 | -0.001 | 0.000 | 0.000 | -0.002 |
| 0.416 | 13.5 | -0.051 | 0.069 | 0.054 | 0.019 | 0.002 | 0.000 | 0.000 | 0.001 | 0.002 | 0.002 | 0.037 | 0.007 |
| | | | -0.168 | -0.163 | -0.004 | -0.024 | -0.031 | 0.000 | -0.002 | -0.001 | 0.000 | 0.000 | 0.000 |
| 0.468 | 14.1 | 0.009 | 0.067 | 0.055 | 0.026 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.029 | 0.001 |
| | | | -0.186 | -0.183 | 0.000 | -0.013 | -0.030 | -0.001 | -0.001 | -0.001 | 0.000 | 0.000 | 0.000 |
| 0.526 | 14.6 | 0.064 | 0.070 | 0.056 | 0.036 | 0.001 | 0.000 | 0.000 | 0.001 | 0.001 | 0.000 | 0.022 | 0.001 |
| | | | -0.200 | -0.198 | 0.000 | -0.001 | -0.027 | -0.001 | -0.001 | 0.000 | -0.001 | 0.000 | -0.003 |
| 0.592 | 15.1 | 0.114 | 0.076 | 0.056 | 0.048 | 0.010 | 0.000 | 0.000 | 0.002 | 0.001 | 0.001 | 0.017 | 0.002 |
| | | | -0.208 | -0.207 | 0.000 | 0.000 | -0.022 | -0.001 | -0.001 | 0.000 | -0.001 | 0.000 | -0.010 |
| 0.666 | 15.6 | 0.154 | 0.089 | 0.058 | 0.058 | 0.031 | 0.000 | 0.000 | 0.003 | 0.002 | 0.001 | 0.012 | 0.002 |
| | | | -0.208 | -0.207 | 0.000 | -0.001 | -0.016 | -0.001 | -0.002 | 0.000 | -0.001 | 0.000 | -0.016 |
| 0.749 | 16.0 | 0.165 | 0.088 | 0.059 | 0.057 | 0.032 | 0.000 | 0.000 | 0.002 | 0.005 | 0.000 | 0.005 | 0.001 |
| | | | -0.188 | -0.186 | 0.000 | -0.001 | -0.010 | -0.001 | -0.002 | 0.000 | -0.001 | 0.000 | -0.022 |
| 0.843 | 16.4 | 0.096 | 0.070 | 0.050 | 0.031 | 0.024 | 0.000 | 0.000 | 0.001 | 0.030 | 0.001 | 0.002 | 0.001 |
| | | | -0.117 | -0.116 | 0.000 | -0.001 | -0.005 | -0.001 | -0.001 | 0.000 | 0.000 | -0.002 | -0.011 |

Table 12: Source of RC systematic error in $5.5^o$ deuteron data.

| $x_{Bj}$ | $Q^2$ | $A_{diff}$ | $\sigma_{total}^{syst}$ | $\mathrm{DIS}_x$ | $\mathrm{DIS}_{Q^2}$ | SF | $g_2$ | PS | Target | FF | ResAsy | Peaking | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.129 | 10.1 | -1.074 | 0.378 | 0.099 | 0.026 | 0.101 | 0.000 | 0.152 | 0.008 | 0.064 | 0.079 | 0.298 | 0.012 |
| | | | -0.219 | -0.019 | -0.171 | -0.003 | -0.114 | 0.000 | -0.008 | 0.000 | -0.069 | -0.014 | -0.019 |
| 0.144 | 11.2 | -1.135 | 0.394 | 0.108 | 0.043 | 0.069 | 0.000 | 0.136 | 0.007 | 0.060 | 0.069 | 0.332 | 0.011 |
| | | | -0.203 | -0.008 | -0.158 | -0.003 | -0.117 | 0.000 | -0.007 | 0.000 | -0.045 | -0.013 | -0.018 |
| 0.162 | 12.4 | -1.191 | 0.407 | 0.111 | 0.057 | 0.038 | 0.000 | 0.114 | 0.005 | 0.055 | 0.055 | 0.360 | 0.011 |
| | | | -0.185 | -0.037 | -0.141 | -0.003 | -0.110 | 0.000 | -0.004 | 0.000 | -0.021 | -0.011 | -0.016 |
| 0.182 | 13.8 | -1.237 | 0.423 | 0.109 | 0.068 | 0.022 | 0.000 | 0.095 | 0.003 | 0.050 | 0.042 | 0.385 | 0.010 |
| | | | -0.173 | -0.069 | -0.122 | -0.002 | -0.099 | 0.000 | -0.002 | 0.000 | -0.007 | -0.009 | -0.015 |
| 0.205 | 15.2 | -1.253 | 0.424 | 0.099 | 0.072 | 0.011 | 0.000 | 0.072 | 0.001 | 0.044 | 0.028 | 0.396 | 0.009 |
| | | | -0.172 | -0.107 | -0.102 | -0.020 | -0.083 | 0.000 | 0.000 | 0.000 | 0.000 | -0.010 | -0.016 |
| 0.230 | 16.8 | -1.232 | 0.414 | 0.087 | 0.070 | 0.009 | 0.000 | 0.052 | 0.002 | 0.038 | 0.017 | 0.393 | 0.012 |
| | | | -0.183 | -0.141 | -0.083 | -0.045 | -0.066 | 0.000 | -0.002 | 0.000 | 0.000 | -0.010 | -0.017 |
| 0.259 | 18.4 | -1.174 | 0.394 | 0.070 | 0.065 | 0.009 | 0.000 | 0.035 | 0.005 | 0.033 | 0.009 | 0.379 | 0.017 |
| | | | -0.205 | -0.174 | -0.065 | -0.067 | -0.050 | 0.000 | -0.004 | 0.000 | 0.000 | -0.010 | -0.015 |
| 0.291 | 20.1 | -1.089 | 0.375 | 0.082 | 0.059 | 0.007 | 0.000 | 0.022 | 0.006 | 0.030 | 0.005 | 0.358 | 0.023 |
| | | | -0.238 | -0.214 | -0.050 | -0.083 | -0.037 | 0.000 | -0.005 | 0.000 | 0.000 | -0.009 | -0.013 |
| 0.328 | 22.0 | -0.963 | 0.347 | 0.098 | 0.051 | 0.005 | 0.000 | 0.012 | 0.006 | 0.024 | 0.003 | 0.327 | 0.025 |
| | | | -0.279 | -0.259 | -0.037 | -0.091 | -0.027 | 0.000 | -0.006 | -0.001 | 0.000 | -0.009 | -0.012 |
| 0.369 | 23.8 | -0.807 | 0.319 | 0.114 | 0.064 | 0.004 | 0.000 | 0.006 | 0.006 | 0.020 | 0.004 | 0.289 | 0.028 |
| | | | -0.321 | -0.309 | -0.023 | -0.083 | -0.018 | 0.000 | -0.005 | 0.000 | 0.000 | -0.007 | -0.008 |
| 0.415 | 26.1 | -0.659 | 0.305 | 0.129 | 0.089 | 0.005 | 0.004 | 0.002 | 0.005 | 0.016 | 0.004 | 0.260 | 0.028 |
| | | | -0.373 | -0.367 | -0.011 | -0.062 | -0.010 | 0.000 | -0.004 | -0.001 | 0.000 | -0.004 | -0.004 |
| 0.465 | 28.4 | -0.480 | 0.288 | 0.139 | 0.115 | 0.002 | 0.009 | 0.000 | 0.003 | 0.012 | 0.003 | 0.222 | 0.027 |
| | | | -0.429 | -0.428 | 0.000 | -0.029 | -0.005 | -0.001 | -0.004 | 0.000 | -0.001 | -0.003 | -0.002 |
| 0.525 | 30.4 | -0.253 | 0.269 | 0.147 | 0.142 | 0.024 | 0.013 | 0.000 | 0.002 | 0.015 | 0.002 | 0.170 | 0.026 |
| | | | -0.479 | -0.479 | 0.000 | -0.005 | 0.000 | -0.001 | -0.001 | 0.000 | -0.001 | 0.000 | 0.000 |
| 0.590 | 32.7 | -0.038 | 0.273 | 0.156 | 0.165 | 0.076 | 0.015 | 0.001 | 0.002 | 0.000 | 0.002 | 0.131 | 0.003 |
| | | | -0.528 | -0.528 | 0.000 | 0.000 | 0.000 | -0.002 | -0.001 | -0.010 | -0.001 | 0.000 | -0.001 |
| 0.666 | 35.2 | 0.164 | 0.283 | 0.169 | 0.174 | 0.112 | 0.015 | 0.000 | 0.004 | 0.004 | 0.001 | 0.091 | 0.000 |
| | | | -0.562 | -0.562 | 0.000 | -0.002 | 0.000 | -0.003 | -0.004 | -0.013 | -0.002 | 0.000 | -0.018 |
| 0.744 | 37.6 | 0.277 | 0.269 | 0.185 | 0.151 | 0.107 | 0.011 | 0.000 | 0.005 | 0.005 | 0.002 | 0.060 | 0.004 |
| | | | -0.545 | -0.545 | 0.000 | -0.001 | 0.000 | -0.003 | -0.005 | -0.005 | -0.002 | 0.000 | -0.016 |
| 0.850 | 39.9 | 0.239 | 0.194 | 0.184 | 0.058 | 0.002 | 0.000 | 0.001 | 0.004 | 0.015 | 0.003 | 0.001 | 0.005 |
| | | | -0.400 | -0.399 | 0.000 | -0.018 | -0.008 | -0.003 | -0.003 | 0.000 | -0.001 | -0.008 | -0.023 |

Table 13: Source of RC systematic error in $10.5^o$ deuteron data.

# E Fit Results

While the RCs discussed here are the ones used in the creation of the published results [1, 12], they are not *based* on those data. Rather, the calculations here use a slightly older data set, provided by Peter Bosted in September 1998.

The difference between these two sets is primarily an updated proton polarization, changing those asymmetries by as much as 5%. The deuteron data are essentially identical. The impact of the difference in these data on the RCs is negligible, well within the systematic error of the correction.

The parameter of the final fit, upon which these RCs are based, are given in table 14. Also shown are the results of the fit to $g_1/F_1$ which is based upon a reduced data set, using only the data with $x_{Bj} > 0.01$, $Q^2 > 1.0\,GeV^2$ and $W^2 > 4.3\,GeV^2$. This fit was used to evolve the data to the common $Q^2$ in the evaluation of the integrals in [1] and [12].

Plots 2, 3 and 4 show the $A_1$ fit together with the data it is based upon. The plots show the fit once as a function of $x_{Bj}$, with different ranges of $Q^2$, and also as a function of $Q^2$, with different $x_{Bj}$-ranges. Both types of plots show the fit evaluated at a value central to the respective bin, the width of the band indicating the statistical error of the fit.

| *Parameter* | $A_1$ *fit* | $g_1/F_1$ *fit* |
|---|---|---|
| $\alpha$ | 0.566 ± 0.047 | .615 ± .042 |
| a | 0.589 ± 0.096 | .715 ± .095 |
| b | 1.613 ± 0.217 | 1.331 ± .225 |
| c | -1.732 ± 0.271 | -1.766 ± .265 |
| d | -0.146 ± 0.033 | -.165 ± .054 |
| $\beta$ | 0.141 ± 0.107 | -.084 ± .111 |
| a' | -0.137 ± 0.054 | -.056 ± .025 |
| b' | -0.102 ± 0.297 | -.319 ± .143 |
| c' | 0.709 ± 0.645 | .830 ± .411 |
| d' | -0.104 ± 0.170 | -.138 ± .311 |

Table 14: Iterative Fit Parameter Values and Errors. *Shown are the results of the final $A_1$ fit, which the RCs are based on, and the results of the fit to the $g_1/F_1$ data, which is used in the integral evaluation in [1, 12].*

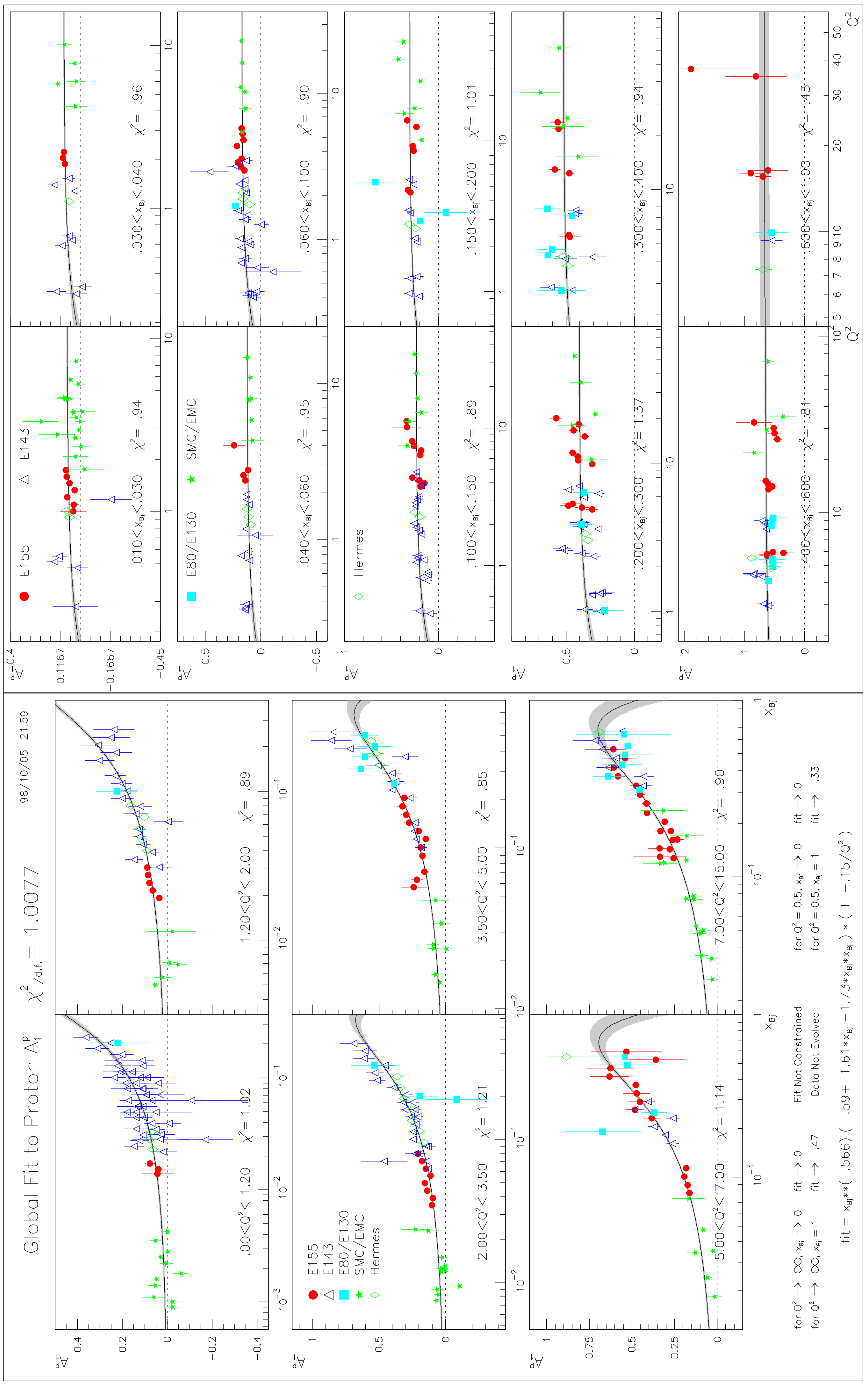


Figure 2: Final Fit to Proton Data

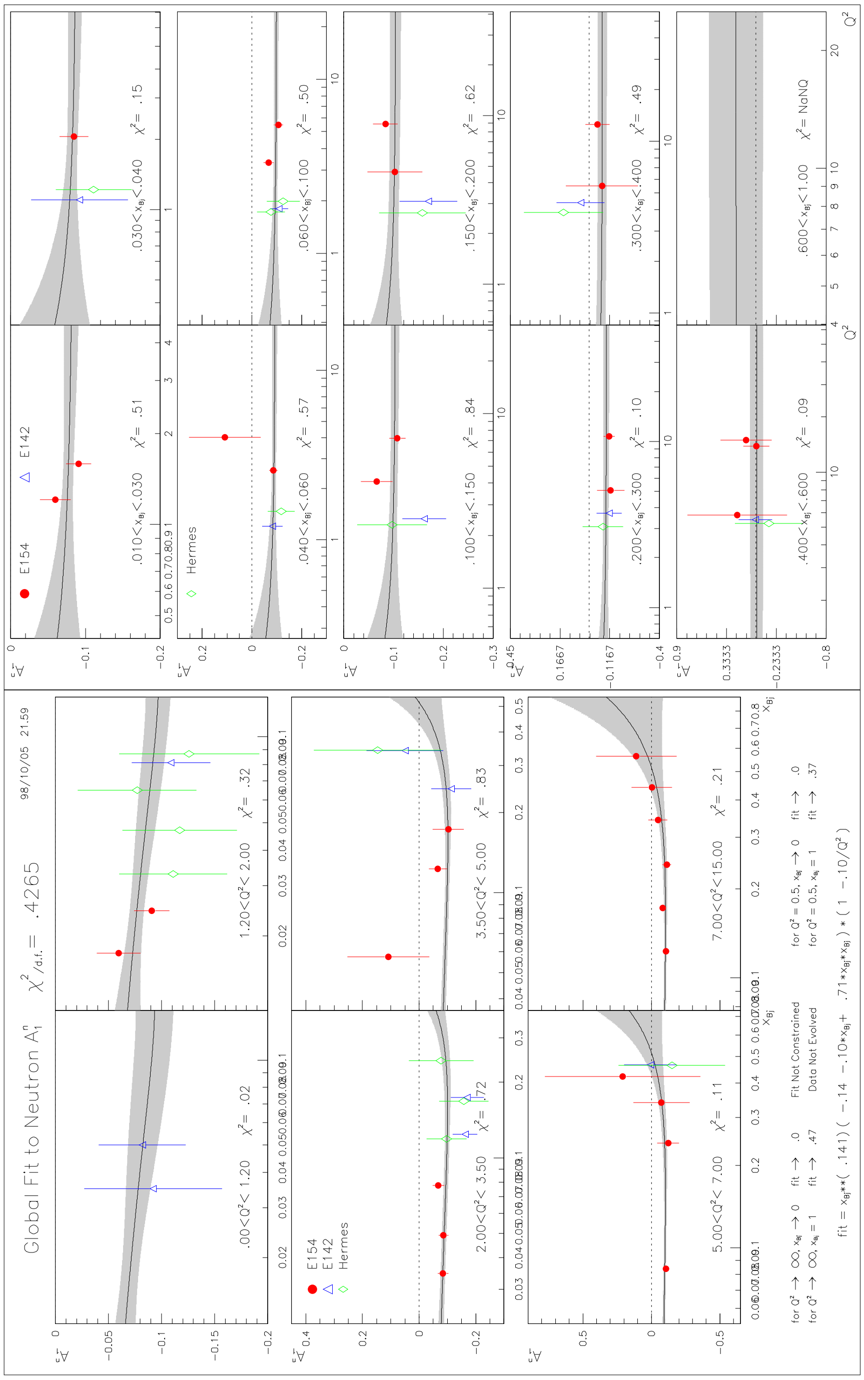


Figure 3: Final Fit to Neutron Data

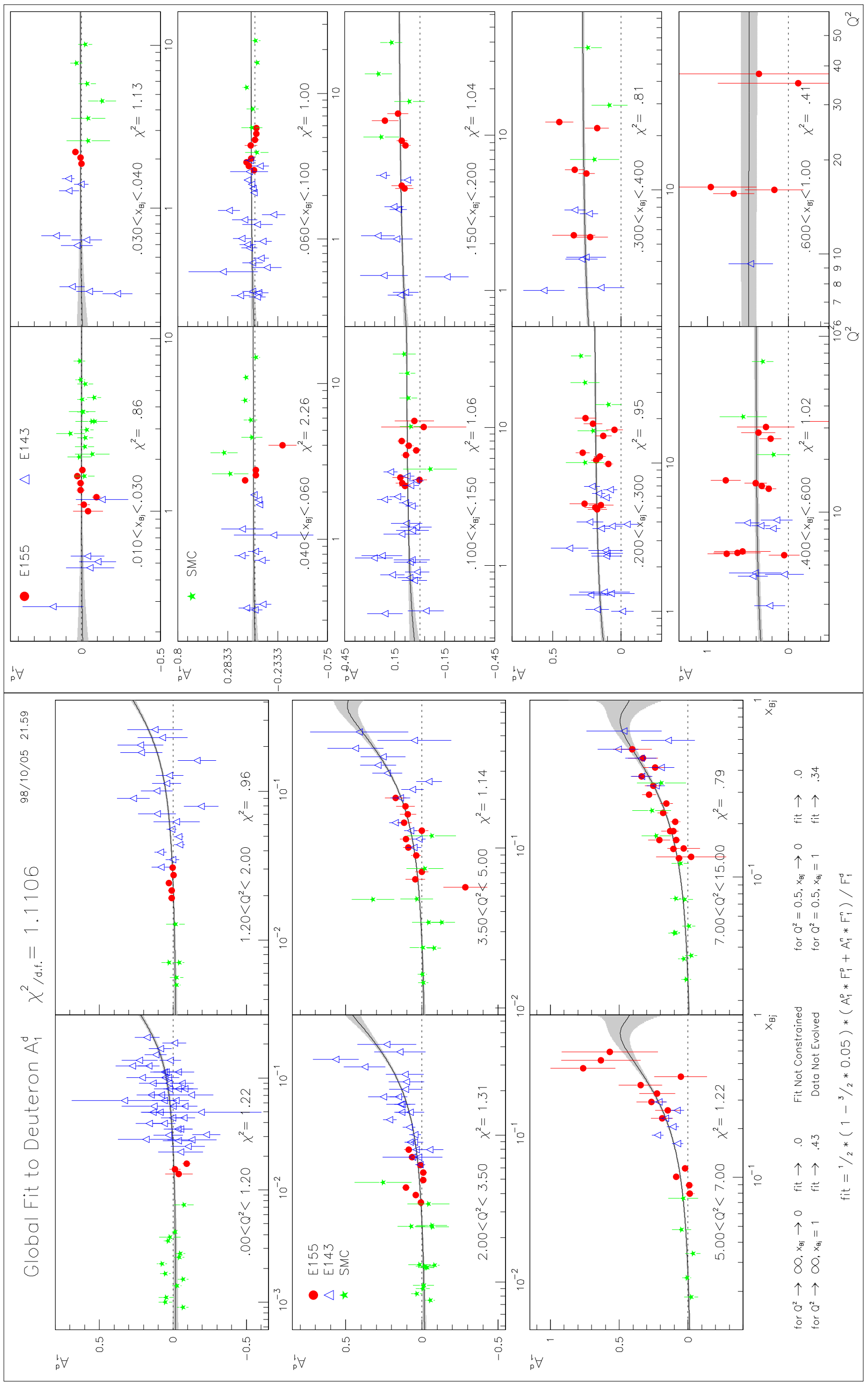


Figure 4: Final Fit to Deuteron Data

# F Normalization Factors

Taking advantage of our custom fitting code, we defined additional fit parameter which effectively applied a normalizing factor to specific data sets. The first implementation of this applied separate scale factors to the data sets E155 proton, E155 deuteron, E143 proton, E143 deuteron and E154 neutron. The scale factors for E143 and E154 were weighed by a systematic scale error, limiting their deviation from unity, using an additional term to the fit's $\chi^2$:

$$\chi^2_{modified} = \chi^2_{data} + \frac{(1-\kappa)^2}{\sigma_\kappa^2} \tag{38}$$

where $\kappa$ represents the normalization factor and $\sigma_\kappa^2$ is the multiplicative part of the experiment's systematic error, which is the geometric sum of beam polarization, target polarization and dilution factor errors (see table 18).

Later, after the final data were available[8], a second such study was done, more general this time, applying a normalizing scale factor to *every* experiment. All of these normalizing scales where weighed using equation 38, above. In both studies, several fits were done, using different combinations of scale factors, holding the unused ones at unity. The data sets used in these fits were reduced, including only those points whose kinematics are safely in the DIS region:

$$x_{Bj} > 0.01,\ Q^2 > 1.0\,GeV^2,\ W^2 > 4.3\,GeV^2$$

The results (tables 15 through 17) are consistent with our expectations. In the second study, all experiments' normalization factors are within $\pm 1\sigma$ of unity, except that for E155 proton data. This indicates consistency between the experiments and provides validation of our model and our approach while also confirming that the E155 proton polarization values are likely still too high.

[8]i.e. those in Greg Mitchell's dissertation [12].

| *Data Set* | *fit A* | *fit B* | *fit C* |
|---|---|---|---|
| E155 p | 0.960 ± 0.021 | 0.953 ± 0.023 | 0.957 ± 0.022 |
| E143 p | 1 | 0.986 ± 0.023 | 0.989 ± 0.023 |
| E154 n | N/A | N/A | 1.01 ± 0.066 |
| E155 d | N/A | N/A | 0.999 ± 0.067 |
| E143 d | N/A | N/A | 0.995 ± 0.042 |

Table 15: Systematic Scale Factors to $A_1$, First Study. *Scales are used only for E143, E154 and E155 data, but E155 scales do not use constraint. Each column is a subset, applying non-unity scales only to the sets listed. A and B are fitting proton data only, C fits protons, neutrons and deuterons.*

| *Data Set* | *Fit A* | *Fit B* | *Fit C* |
|---|---|---|---|
| modified $\chi^2$ | 468.1 | 468.0 | 466.3 |
| E155 p | 0.954 ± 0.021 | 0.952 ± 0.022 | 0.962 ± 0.028 |
| E143 p | 1 | 0.992 ± 0.022 | 1.004 ± 0.026 |
| E80/E130 | 1 | 0.999 ± 0.039 | 1.005 ± 0.039 |
| Hermes p | 1 | 1 | 1.027 ± 0.031 |
| SMC p | 1 | 1 | 1.000 ± 0.039 |
| EMC p | 1 | 1 | 1.007 ± 0.078 |
| E154 n | 1 | 1.005 ± 0.039 | 1.005 ± 0.039 |
| E142 n | 1 | 1 | 0.910 ± 0.110 |
| Hermes n | 1 | 1 | 0.984 ± 0.073 |
| E155 d | 0.971 ± 0.044 | 0.970 ± 0.045 | 0.975 ± 0.046 |
| E143 d | 1 | 1.002 ± 0.041 | 1.008 ± 0.041 |
| SMC d | 1 | 1 | 0.991 ± 0.056 |

Table 16: Systematic Scale Factors to $A_1$, Second Study. *Proton, neutron and deuteron data are being fitted. Data sets with unity scale are held fixed.*

| *Data Set* | *Fit A* | *Fit B* | *Fit C* | *Fit D* |
|---|---|---|---|---|
| modified $\chi^2$ | 96.89 | 96.81 | 96.70 | ($x_{Bj} > 0.06$) |
| E155 p | .974 ± .041 | .967 ± .046 | .971 ± .050 | .975 ± .052 |
| E143 p | 1 | .992 ± .027 | .997 ± .032 | 1.000 ± .033 |
| Hermes p | 1 | 1 | 1.014 ± .041 | 1.005 ± .045 |

Table 17: Systematic Scale Factors to $A_1$. *Only the proton data of the sets E155 $2.75^o$, E143 $4.5^o$ $29GeV$ and Hermes are used. The results in the last column (fit D) were obtained using only the subset of data with $x_{Bjorken} > 0.06$.*

| *Data Set* | *Scale Factor Error* $\sigma_\kappa$ |
|---|---|
| E155 p | 0.120 |
| E143 p | 0.037 |
| E80/E130 | 0.050 |
| Hermes p | 0.057 |
| SMC p | 0.055 |
| EMC p | 0.110 |
| E154 n | 0.041 |
| E142 n | 0.115 |
| Hermes n | 0.074 |
| E155 d | 0.060 |
| E143 d | 0.049 |
| SMC d | 0.059 |

Table 18: Error Weight of Systematic Scale Factors. *E143 and E154 values were used in both studies.*

## G Radiative Corrections to $A_\perp$

While not the focus of the experiment, E155 also measured $A_\perp$. Unlike E143, though, this measurement was done at different kinematics from the $A_\parallel$ one. It is for this reason that the RC calculation did not use these data to calculate $A_1(A_\parallel, A_\perp)$ but substituted $A_1(A_\parallel, g_2^{WW})$ instead. The results, which were used in [2], are summarized in tables 19 and 20. Note that these RCs use the dilution-inspired definition of $f_{RC}$ from E154 [13] and an older fit to $A_1$.

| *2.75° Spectrometer Data* | | | | | | *5.5° Spectrometer Data* | | | | | | *10.5° Spectrometer Data* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $x_{Bj}$ | $Q^2$ | $A_\perp^{Born}$ | $A_{diff}$ | $f_{RC}$ | $A_{RC}$ | $x_{Bj}$ | $Q^2$ | $A_\perp^{Born}$ | $A_{diff}$ | $f_{RC}$ | $A_{RC}$ | $x_{Bj}$ | $Q^2$ | $A_\perp^{Born}$ | $A_{diff}$ | $f_{RC}$ | $A_{RC}$ |
| 0.020 | 1.05 | 0.0020 | 0.152 | 0.489 | 0.099 | | | | | | | | | | | | |
| 0.022 | 1.15 | 0.0022 | 0.162 | 0.505 | 0.105 | | | | | | | | | | | | |
| 0.025 | 1.25 | 0.0024 | 0.171 | 0.529 | 0.108 | | | | | | | | | | | | |
| 0.027 | 1.35 | 0.0026 | 0.180 | 0.554 | 0.113 | | | | | | | | | | | | |
| 0.031 | 1.41 | 0.0028 | 0.181 | 0.589 | 0.110 | | | | | | | | | | | | |
| 0.035 | 1.48 | 0.0030 | 0.176 | 0.617 | 0.100 | | | | | | | | | | | | |
| 0.039 | 1.56 | 0.0031 | 0.172 | 0.643 | 0.093 | | | | | | | | | | | | |
| 0.044 | 1.66 | 0.0033 | 0.178 | 0.662 | 0.099 | | | | | | | | | | | | |
| 0.050 | 1.76 | 0.0034 | 0.185 | 0.681 | 0.110 | | | | | | | | | | | | |
| 0.056 | 1.86 | 0.0036 | 0.199 | 0.697 | 0.128 | 0.056 | 3.13 | 0.0046 | 0.365 | 0.590 | 0.296 | | | | | | |
| 0.063 | 1.95 | 0.0037 | 0.204 | 0.714 | 0.139 | 0.065 | 3.43 | 0.0051 | 0.362 | 0.647 | 0.282 | | | | | | |
| 0.070 | 2.05 | 0.0037 | 0.211 | 0.730 | 0.154 | 0.072 | 3.70 | 0.0053 | 0.377 | 0.673 | 0.301 | | | | | | |
| 0.079 | 2.16 | 0.0036 | 0.222 | 0.744 | 0.174 | 0.080 | 4.03 | 0.0055 | 0.399 | 0.699 | 0.332 | | | | | | |
| 0.089 | 2.26 | 0.0034 | 0.229 | 0.759 | 0.193 | 0.090 | 4.39 | 0.0057 | 0.417 | 0.725 | 0.360 | | | | | | |
| 0.101 | 2.36 | 0.0032 | 0.237 | 0.774 | 0.212 | 0.101 | 4.76 | 0.0056 | 0.429 | 0.751 | 0.386 | | | | | | |
| 0.113 | 2.45 | 0.0028 | 0.243 | 0.789 | 0.231 | 0.113 | 5.13 | 0.0053 | 0.429 | 0.778 | 0.399 | | | | | | |
| 0.127 | 2.55 | 0.0023 | 0.247 | 0.804 | 0.251 | 0.128 | 5.52 | 0.0047 | 0.429 | 0.801 | 0.418 | 0.129 | 7.67 | 0.0055 | 0.721 | 0.711 | 0.790 |
| 0.144 | 2.64 | 0.0015 | 0.244 | 0.820 | 0.264 | 0.144 | 5.91 | 0.0038 | 0.428 | 0.824 | 0.437 | 0.144 | 8.49 | 0.0051 | 0.729 | 0.748 | 0.802 |
| 0.162 | 2.72 | 0.0007 | 0.244 | 0.837 | 0.279 | 0.162 | 6.31 | 0.0026 | 0.426 | 0.844 | 0.457 | 0.162 | 9.48 | 0.0044 | 0.738 | 0.778 | 0.824 |
| 0.182 | 2.81 | -0.0005 | 0.239 | 0.853 | 0.288 | 0.182 | 6.69 | 0.0008 | 0.416 | 0.865 | 0.469 | 0.182 | 10.47 | 0.0032 | 0.720 | 0.813 | 0.811 |
| 0.205 | 2.89 | -0.0018 | 0.230 | 0.871 | 0.291 | 0.205 | 7.07 | -0.0015 | 0.403 | 0.885 | 0.474 | 0.204 | 11.47 | 0.0015 | 0.690 | 0.846 | 0.788 |
| 0.230 | 2.96 | -0.0034 | 0.220 | 0.887 | 0.291 | 0.230 | 7.45 | -0.0042 | 0.385 | 0.903 | 0.471 | 0.230 | 12.67 | -0.0008 | 0.662 | 0.876 | 0.768 |
| 0.259 | 3.03 | -0.0052 | 0.204 | 0.904 | 0.282 | 0.259 | 7.82 | -0.0075 | 0.361 | 0.921 | 0.457 | 0.260 | 13.81 | -0.0041 | 0.614 | 0.904 | 0.723 |
| 0.292 | 3.09 | -0.0072 | 0.187 | 0.920 | 0.267 | 0.292 | 8.20 | -0.0114 | 0.332 | 0.937 | 0.430 | 0.291 | 15.02 | -0.0081 | 0.571 | 0.927 | 0.681 |
| 0.328 | 3.15 | -0.0095 | 0.165 | 0.934 | 0.244 | 0.328 | 8.54 | -0.0157 | 0.297 | 0.952 | 0.390 | 0.330 | 16.36 | -0.0136 | 0.518 | 0.948 | 0.621 |
| 0.369 | 3.21 | -0.0119 | 0.142 | 0.948 | 0.215 | 0.370 | 8.89 | -0.0204 | 0.258 | 0.966 | 0.339 | 0.371 | 18.15 | -0.0192 | 0.480 | 0.963 | 0.571 |
| 0.416 | 3.26 | -0.0143 | 0.118 | 0.962 | 0.180 | 0.416 | 9.23 | -0.0253 | 0.215 | 0.978 | 0.278 | 0.418 | 19.65 | -0.0263 | 0.418 | 0.977 | 0.489 |
| 0.468 | 3.30 | -0.0167 | 0.091 | 0.974 | 0.139 | 0.468 | 9.55 | -0.0304 | 0.169 | 0.987 | 0.211 | 0.470 | 21.34 | -0.0340 | 0.352 | 0.987 | 0.400 |
| 0.527 | 3.33 | -0.0187 | 0.058 | 0.982 | 0.093 | 0.526 | 9.84 | -0.0352 | 0.119 | 0.994 | 0.141 | 0.529 | 23.13 | -0.0422 | 0.278 | 0.994 | 0.304 |
| 0.593 | 3.36 | -0.0200 | 0.074 | 0.986 | 0.103 | 0.592 | 10.10 | -0.0394 | 0.067 | 0.998 | 0.074 | 0.596 | 24.58 | -0.0504 | 0.194 | 0.998 | 0.206 |
| 0.667 | 3.39 | -0.0200 | 0.094 | 0.975 | 0.147 | 0.666 | 10.38 | -0.0425 | 0.016 | 0.999 | 0.020 | 0.671 | 26.00 | -0.0574 | 0.106 | 0.999 | 0.113 |
| 0.751 | 3.41 | -0.0232 | -0.064 | 0.940 | 0.080 | 0.750 | 10.63 | -0.0435 | -0.010 | 0.997 | 0.003 | 0.755 | 28.43 | -0.0615 | 0.032 | 0.999 | 0.038 |
| 0.846 | 3.43 | -0.0060 | 0.352 | 0.866 | 0.499 | 0.844 | 10.79 | -0.0410 | 0.001 | 0.986 | 0.060 | 0.850 | 29.34 | -0.0604 | -0.010 | 0.999 | -0.002 |

Table 19: Radiative Corrections to $A_\perp$ for E155 Proton Data.

Table 20: Radiative Corrections to $A_\perp$ for E155 Deuteron Data.

| *2.75° Spectrometer Data* | | | | | | *5.5° Spectrometer Data* | | | | | | *10.5° Spectrometer Data* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $x_{Bj}$ | $Q^2$ | $A_\perp^{Born}$ | $A_{diff}$ | $f_{RC}$ | $A_{RC}$ | $x_{Bj}$ | $Q^2$ | $A_\perp^{Born}$ | $A_{diff}$ | $f_{RC}$ | $A_{RC}$ | $x_{Bj}$ | $Q^2$ | $A_\perp^{Born}$ | $A_{diff}$ | $f_{RC}$ | $A_{RC}$ |
| 0.020 | 1.05 | 0.0007 | 0.087 | 0.572 | 0.104 | | | | | | | | | | | | |
| 0.022 | 1.15 | 0.0007 | 0.093 | 0.586 | 0.107 | | | | | | | | | | | | |
| 0.025 | 1.25 | 0.0008 | 0.096 | 0.605 | 0.104 | | | | | | | | | | | | |
| 0.027 | 1.35 | 0.0009 | 0.098 | 0.626 | 0.099 | | | | | | | | | | | | |
| 0.031 | 1.41 | 0.0011 | 0.089 | 0.656 | 0.080 | | | | | | | | | | | | |
| 0.035 | 1.48 | 0.0012 | 0.081 | 0.681 | 0.065 | | | | | | | | | | | | |
| 0.039 | 1.56 | 0.0013 | 0.077 | 0.701 | 0.055 | | | | | | | | | | | | |
| 0.044 | 1.66 | 0.0014 | 0.076 | 0.718 | 0.051 | | | | | | | | | | | | |
| 0.050 | 1.76 | 0.0015 | 0.076 | 0.734 | 0.049 | | | | | | | | | | | | |
| 0.056 | 1.86 | 0.0016 | 0.078 | 0.749 | 0.050 | 0.056 | 3.13 | 0.0019 | 0.188 | 0.659 | 0.187 | | | | | | |
| 0.063 | 1.95 | 0.0017 | 0.080 | 0.763 | 0.053 | 0.065 | 3.43 | 0.0022 | 0.170 | 0.708 | 0.149 | | | | | | |
| 0.070 | 2.05 | 0.0018 | 0.084 | 0.777 | 0.057 | 0.072 | 3.70 | 0.0024 | 0.171 | 0.731 | 0.146 | | | | | | |
| 0.079 | 2.16 | 0.0018 | 0.088 | 0.790 | 0.063 | 0.080 | 4.03 | 0.0026 | 0.175 | 0.754 | 0.148 | | | | | | |
| 0.089 | 2.26 | 0.0018 | 0.093 | 0.803 | 0.070 | 0.090 | 4.39 | 0.0027 | 0.180 | 0.777 | 0.153 | | | | | | |
| 0.101 | 2.35 | 0.0018 | 0.097 | 0.815 | 0.078 | 0.101 | 4.76 | 0.0028 | 0.184 | 0.799 | 0.159 | | | | | | |
| 0.113 | 2.45 | 0.0017 | 0.102 | 0.828 | 0.087 | 0.113 | 5.13 | 0.0028 | 0.184 | 0.821 | 0.163 | | | | | | |
| 0.127 | 2.55 | 0.0015 | 0.106 | 0.841 | 0.097 | 0.128 | 5.52 | 0.0027 | 0.185 | 0.841 | 0.169 | 0.129 | 7.65 | 0.0029 | 0.374 | 0.766 | 0.400 |
| 0.144 | 2.64 | 0.0013 | 0.109 | 0.855 | 0.106 | 0.144 | 5.91 | 0.0024 | 0.186 | 0.859 | 0.177 | 0.144 | 8.47 | 0.0028 | 0.374 | 0.797 | 0.398 |
| 0.162 | 2.72 | 0.0009 | 0.112 | 0.868 | 0.115 | 0.162 | 6.31 | 0.0019 | 0.187 | 0.877 | 0.186 | 0.162 | 9.43 | 0.0026 | 0.376 | 0.823 | 0.402 |
| 0.182 | 2.80 | 0.0004 | 0.113 | 0.882 | 0.122 | 0.182 | 6.69 | 0.0012 | 0.188 | 0.893 | 0.196 | 0.182 | 10.47 | 0.0021 | 0.368 | 0.851 | 0.395 |
| 0.205 | 2.89 | -0.0002 | 0.113 | 0.896 | 0.129 | 0.205 | 7.07 | 0.0002 | 0.186 | 0.909 | 0.204 | 0.205 | 11.52 | 0.0014 | 0.352 | 0.877 | 0.381 |
| 0.230 | 2.96 | -0.0010 | 0.111 | 0.910 | 0.133 | 0.230 | 7.45 | -0.0012 | 0.183 | 0.923 | 0.209 | 0.230 | 12.67 | 0.0003 | 0.334 | 0.901 | 0.367 |
| 0.259 | 3.03 | -0.0020 | 0.108 | 0.923 | 0.133 | 0.259 | 7.83 | -0.0029 | 0.178 | 0.937 | 0.209 | 0.259 | 13.83 | -0.0013 | 0.315 | 0.923 | 0.352 |
| 0.292 | 3.10 | -0.0031 | 0.103 | 0.936 | 0.131 | 0.292 | 8.20 | -0.0050 | 0.169 | 0.951 | 0.204 | 0.292 | 15.05 | -0.0035 | 0.297 | 0.942 | 0.336 |
| 0.328 | 3.16 | -0.0044 | 0.096 | 0.948 | 0.126 | 0.329 | 8.54 | -0.0075 | 0.157 | 0.963 | 0.192 | 0.328 | 16.26 | -0.0064 | 0.275 | 0.958 | 0.315 |
| 0.369 | 3.21 | -0.0058 | 0.088 | 0.959 | 0.117 | 0.370 | 8.89 | -0.0103 | 0.141 | 0.973 | 0.173 | 0.369 | 17.64 | -0.0099 | 0.254 | 0.971 | 0.291 |
| 0.416 | 3.26 | -0.0073 | 0.080 | 0.969 | 0.106 | 0.416 | 9.24 | -0.0135 | 0.122 | 0.982 | 0.148 | 0.415 | 19.06 | -0.0142 | 0.227 | 0.981 | 0.258 |
| 0.468 | 3.30 | -0.0089 | 0.070 | 0.978 | 0.091 | 0.468 | 9.56 | -0.0168 | 0.100 | 0.990 | 0.118 | 0.467 | 20.59 | -0.0190 | 0.194 | 0.989 | 0.217 |
| 0.527 | 3.33 | -0.0103 | 0.064 | 0.985 | 0.081 | 0.527 | 9.84 | -0.0201 | 0.073 | 0.995 | 0.083 | 0.524 | 21.97 | -0.0241 | 0.154 | 0.995 | 0.168 |
| 0.593 | 3.36 | -0.0116 | 0.069 | 0.988 | 0.084 | 0.592 | 10.11 | -0.0231 | 0.042 | 0.998 | 0.046 | 0.593 | 23.09 | -0.0297 | 0.101 | 0.998 | 0.107 |
| 0.668 | 3.38 | -0.0138 | 0.075 | 0.981 | 0.104 | 0.666 | 10.38 | -0.0254 | 0.007 | 0.999 | 0.009 | 0.666 | 24.55 | -0.0339 | 0.046 | 0.999 | 0.049 |
| 0.751 | 3.41 | -0.0147 | 0.075 | 0.955 | 0.149 | 0.750 | 10.59 | -0.0257 | -0.014 | 0.997 | -0.007 | 0.747 | 26.07 | -0.0354 | -0.009 | 0.999 | -0.006 |
| 0.846 | 3.43 | -0.0125 | 0.279 | 0.869 | 0.509 | 0.844 | 10.81 | -0.0223 | 0.014 | 0.989 | 0.040 | 0.850 | 29.34 | -0.0310 | -0.040 | 0.999 | -0.037 |

## H Point-to-Point Radiative Corrections

The results of the RC calculations are summarized in tables 21 through 26. In addition to the kinematics and model values $A_{fit}^{Born}$ and $A_{fit}^{rad}$ for each data point, the respective values of $f_{RC}$ (eq. 28), $A_{RC}$ (eq. 8), and the statistical error term $\sigma_{A_{RC}}$ (eq. 11) are given, as well as the final experimental data, $A_{meas}^{Born}$ and errors $\sigma_{A^{Born}}$.

| $x_{Bj}$ | $Q^2$ | $A_{fit}^{Born}$ | $A_{fit}^{rad}$ | $f_{RC}$ | $A_{RC}$ | $\sigma_{A_{RC}}$ | $A_{meas}^{Born}$ | $\sigma_{A^{Born}}$ |
|---|---|---|---|---|---|---|---|---|
| 0.014 | 1.0 | 0.0369 | 0.0242 | 0.513 | -0.0102 | 0.0006 | 0.0350 | 0.0442 |
| 0.015 | 1.1 | 0.0393 | 0.0266 | 0.524 | -0.0115 | 0.0006 | 0.0334 | 0.0180 |
| 0.017 | 1.2 | 0.0420 | 0.0295 | 0.536 | -0.0132 | 0.0005 | 0.0566 | 0.0133 |
| 0.019 | 1.3 | 0.0446 | 0.0328 | 0.552 | -0.0148 | 0.0005 | 0.0296 | 0.0121 |
| 0.022 | 1.5 | 0.0474 | 0.0363 | 0.569 | -0.0164 | 0.0004 | 0.0483 | 0.0116 |
| 0.024 | 1.6 | 0.0497 | 0.0397 | 0.589 | -0.0177 | 0.0004 | 0.0559 | 0.0110 |
| 0.027 | 1.7 | 0.0526 | 0.0432 | 0.607 | -0.0186 | 0.0004 | 0.0588 | 0.0105 |
| 0.031 | 1.9 | 0.0551 | 0.0465 | 0.624 | -0.0195 | 0.0003 | 0.0604 | 0.0103 |
| 0.035 | 2.0 | 0.0576 | 0.0499 | 0.643 | -0.0201 | 0.0003 | 0.0657 | 0.0098 |
| 0.039 | 2.2 | 0.0603 | 0.0534 | 0.661 | -0.0205 | 0.0003 | 0.0601 | 0.0097 |
| 0.044 | 2.4 | 0.0629 | 0.0568 | 0.679 | -0.0208 | 0.0002 | 0.0819 | 0.0094 |
| 0.050 | 2.6 | 0.0657 | 0.0603 | 0.694 | -0.0211 | 0.0002 | 0.0877 | 0.0095 |
| 0.056 | 2.8 | 0.0682 | 0.0635 | 0.714 | -0.0207 | 0.0002 | 0.0622 | 0.0095 |
| 0.063 | 3.0 | 0.0709 | 0.0667 | 0.729 | -0.0207 | 0.0002 | 0.0770 | 0.0097 |
| 0.071 | 3.2 | 0.0732 | 0.0695 | 0.748 | -0.0197 | 0.0002 | 0.0864 | 0.0098 |
| 0.079 | 3.4 | 0.0755 | 0.0723 | 0.770 | -0.0184 | 0.0002 | 0.0958 | 0.0099 |
| 0.089 | 3.6 | 0.0776 | 0.0748 | 0.792 | -0.0168 | 0.0002 | 0.0759 | 0.0099 |
| 0.101 | 3.8 | 0.0797 | 0.0771 | 0.814 | -0.0151 | 0.0002 | 0.0780 | 0.0099 |
| 0.113 | 4.0 | 0.0816 | 0.0793 | 0.839 | -0.0130 | 0.0002 | 0.0590 | 0.0099 |
| 0.128 | 4.2 | 0.0835 | 0.0814 | 0.861 | -0.0111 | 0.0002 | 0.0736 | 0.0100 |
| 0.144 | 4.4 | 0.0851 | 0.0832 | 0.881 | -0.0092 | 0.0002 | 0.0922 | 0.0103 |
| 0.162 | 4.5 | 0.0865 | 0.0846 | 0.898 | -0.0077 | 0.0002 | 0.0923 | 0.0106 |
| 0.182 | 4.7 | 0.0878 | 0.0860 | 0.913 | -0.0064 | 0.0002 | 0.0932 | 0.0111 |
| 0.205 | 4.9 | 0.0886 | 0.0868 | 0.925 | -0.0052 | 0.0002 | 0.0820 | 0.0116 |
| 0.230 | 5.0 | 0.0893 | 0.0875 | 0.940 | -0.0037 | 0.0002 | 0.0933 | 0.0120 |
| 0.259 | 5.2 | 0.0895 | 0.0876 | 0.962 | -0.0016 | 0.0003 | 0.1066 | 0.0126 |
| 0.292 | 5.3 | 0.0896 | 0.0877 | 0.994 | 0.0014 | 0.0003 | 0.0917 | 0.0132 |
| 0.328 | 5.5 | 0.0893 | 0.0873 | 1.042 | 0.0055 | 0.0003 | 0.0875 | 0.0139 |
| 0.370 | 5.6 | 0.0880 | 0.0860 | 1.095 | 0.0095 | 0.0003 | 0.0808 | 0.0148 |
| 0.416 | 5.7 | 0.0863 | 0.0841 | 1.134 | 0.0121 | 0.0003 | 0.0945 | 0.0159 |
| 0.468 | 5.8 | 0.0836 | 0.0814 | 1.139 | 0.0122 | 0.0002 | 0.0853 | 0.0179 |
| 0.527 | 5.9 | 0.0799 | 0.0775 | 1.116 | 0.0104 | 0.0002 | 0.0441 | 0.0209 |
| 0.593 | 6.0 | 0.0748 | 0.0722 | 1.078 | 0.0078 | 0.0001 | 0.0572 | 0.0245 |

Table 21: Final RCs for 2.75$^o$ proton data.

| $x_{Bj}$ | $Q^2$ | $A_{fit}^{Born}$ | $A_{fit}^{rad}$ | $f_{RC}$ | $A_{RC}$ | $\sigma_{A_{RC}}$ | $A_{meas}^{Born}$ | $\sigma_{A^{Born}}$ |
|---|---|---|---|---|---|---|---|---|
| 0.057 | 4.0 | 0.1058 | 0.0913 | 0.607 | -0.0447 | 0.0004 | 0.1943 | 0.0778 |
| 0.063 | 4.4 | 0.1134 | 0.1005 | 0.633 | -0.0453 | 0.0004 | 0.1734 | 0.0355 |
| 0.071 | 4.8 | 0.1218 | 0.1106 | 0.674 | -0.0424 | 0.0004 | 0.1267 | 0.0227 |
| 0.080 | 5.3 | 0.1305 | 0.1211 | 0.698 | -0.0428 | 0.0004 | 0.1291 | 0.0172 |
| 0.090 | 5.8 | 0.1396 | 0.1320 | 0.733 | -0.0404 | 0.0004 | 0.1349 | 0.0143 |
| 0.101 | 6.3 | 0.1489 | 0.1429 | 0.779 | -0.0346 | 0.0004 | 0.1467 | 0.0127 |
| 0.113 | 6.9 | 0.1584 | 0.1538 | 0.803 | -0.0332 | 0.0004 | 0.1358 | 0.0121 |
| 0.128 | 7.4 | 0.1678 | 0.1646 | 0.842 | -0.0275 | 0.0004 | 0.1820 | 0.0116 |
| 0.144 | 8.0 | 0.1773 | 0.1749 | 0.867 | -0.0243 | 0.0004 | 0.1908 | 0.0115 |
| 0.162 | 8.6 | 0.1869 | 0.1849 | 0.882 | -0.0227 | 0.0005 | 0.1746 | 0.0118 |
| 0.182 | 9.2 | 0.1960 | 0.1943 | 0.898 | -0.0205 | 0.0005 | 0.1738 | 0.0123 |
| 0.205 | 9.9 | 0.2047 | 0.2031 | 0.911 | -0.0182 | 0.0005 | 0.1860 | 0.0129 |
| 0.230 | 10.5 | 0.2128 | 0.2110 | 0.923 | -0.0159 | 0.0005 | 0.2352 | 0.0135 |
| 0.259 | 11.1 | 0.2200 | 0.2179 | 0.941 | -0.0116 | 0.0006 | 0.2227 | 0.0143 |
| 0.292 | 11.7 | 0.2258 | 0.2233 | 0.967 | -0.0052 | 0.0006 | 0.2281 | 0.0150 |
| 0.328 | 12.3 | 0.2302 | 0.2273 | 1.012 | 0.0055 | 0.0007 | 0.2234 | 0.0157 |
| 0.370 | 12.9 | 0.2327 | 0.2295 | 1.065 | 0.0172 | 0.0007 | 0.2526 | 0.0165 |
| 0.416 | 13.5 | 0.2332 | 0.2296 | 1.113 | 0.0269 | 0.0006 | 0.2429 | 0.0178 |
| 0.468 | 14.1 | 0.2306 | 0.2267 | 1.126 | 0.0293 | 0.0006 | 0.2035 | 0.0202 |
| 0.526 | 14.6 | 0.2246 | 0.2204 | 1.113 | 0.0265 | 0.0005 | 0.2086 | 0.0242 |
| 0.592 | 15.1 | 0.2144 | 0.2102 | 1.088 | 0.0212 | 0.0004 | 0.2032 | 0.0302 |
| 0.666 | 15.6 | 0.1992 | 0.1951 | 1.063 | 0.0156 | 0.0003 | 0.1969 | 0.0391 |
| 0.749 | 16.0 | 0.1776 | 0.1740 | 1.040 | 0.0103 | 0.0002 | 0.2323 | 0.0535 |
| 0.844 | 16.4 | 0.1482 | 0.1458 | 1.017 | 0.0048 | 0.0001 | 0.1402 | 0.0862 |

Table 22: Final RCs for $5.5^o$ proton data.

| $x_{Bj}$ | $Q^2$ | $A_{fit}^{Born}$ | $A_{fit}^{rad}$ | $f_{RC}$ | $A_{RC}$ | $\sigma_{A_{RC}}$ | $A_{meas}^{Born}$ | $\sigma_{A^{Born}}$ |
|---|---|---|---|---|---|---|---|---|
| 0.130 | 10.1 | 0.2226 | 0.2071 | 0.715 | -0.0671 | 0.0008 | 0.3062 | 0.1378 |
| 0.145 | 11.2 | 0.2421 | 0.2299 | 0.757 | -0.0616 | 0.0008 | 0.3103 | 0.0575 |
| 0.162 | 12.4 | 0.2639 | 0.2556 | 0.796 | -0.0572 | 0.0009 | 0.2202 | 0.0373 |
| 0.182 | 13.7 | 0.2875 | 0.2827 | 0.833 | -0.0520 | 0.0009 | 0.3050 | 0.0300 |
| 0.205 | 15.2 | 0.3130 | 0.3115 | 0.868 | -0.0459 | 0.0010 | 0.3322 | 0.0274 |
| 0.230 | 16.7 | 0.3389 | 0.3400 | 0.898 | -0.0398 | 0.0010 | 0.4006 | 0.0285 |
| 0.259 | 18.3 | 0.3659 | 0.3685 | 0.931 | -0.0301 | 0.0011 | 0.3645 | 0.0312 |
| 0.291 | 20.0 | 0.3936 | 0.3968 | 0.969 | -0.0160 | 0.0012 | 0.4968 | 0.0347 |
| 0.328 | 21.9 | 0.4208 | 0.4236 | 1.016 | 0.0039 | 0.0013 | 0.4718 | 0.0370 |
| 0.369 | 23.8 | 0.4466 | 0.4484 | 1.076 | 0.0300 | 0.0014 | 0.4670 | 0.0400 |
| 0.414 | 26.0 | 0.4733 | 0.4739 | 1.128 | 0.0534 | 0.0014 | 0.3832 | 0.0533 |
| 0.464 | 28.3 | 0.4939 | 0.4927 | 1.144 | 0.0631 | 0.0013 | 0.4093 | 0.0867 |
| 0.525 | 30.2 | 0.5004 | 0.4970 | 1.125 | 0.0585 | 0.0010 | 0.4019 | 0.1404 |
| 0.590 | 32.5 | 0.5028 | 0.4977 | 1.097 | 0.0489 | 0.0009 | 0.6068 | 0.2003 |
| 0.665 | 35.0 | 0.4906 | 0.4841 | 1.069 | 0.0376 | 0.0007 | 0.5600 | 0.3392 |
| 0.743 | 37.2 | 0.4626 | 0.4556 | 1.046 | 0.0268 | 0.0005 | 1.2388 | 0.6591 |
| 0.850 | 39.9 | 0.3985 | 0.3928 | 1.023 | 0.0144 | 0.0003 | 1.5640 | 1.2618 |

Table 23: Final RCs for $10.5^o$ proton data.

| $x_{Bj}$ | $Q^2$ | $A_{fit}^{Born}$ | $A_{fit}^{rad}$ | $f_{RC}$ | $A_{RC}$ | $\sigma_{A_{RC}}$ | $A_{meas}^{Born}$ | $\sigma_{A^{Born}}$ |
|---|---|---|---|---|---|---|---|---|
| 0.014 | 1.0 | -0.0062 | 0.0010 | 0.660 | -0.0078 | 0.0008 | -0.0254 | 0.0547 |
| 0.015 | 1.1 | -0.0053 | 0.0017 | 0.657 | -0.0079 | 0.0007 | -0.0101 | 0.0232 |
| 0.017 | 1.2 | -0.0042 | 0.0025 | 0.652 | -0.0080 | 0.0007 | -0.0589 | 0.0172 |
| 0.019 | 1.3 | -0.0030 | 0.0033 | 0.645 | -0.0082 | 0.0006 | 0.0041 | 0.0165 |
| 0.022 | 1.5 | -0.0016 | 0.0043 | 0.643 | -0.0083 | 0.0005 | 0.0046 | 0.0162 |
| 0.024 | 1.6 | -0.0002 | 0.0054 | 0.646 | -0.0085 | 0.0005 | 0.0183 | 0.0156 |
| 0.027 | 1.7 | 0.0014 | 0.0064 | 0.657 | -0.0084 | 0.0004 | -0.0037 | 0.0152 |
| 0.031 | 1.9 | 0.0029 | 0.0076 | 0.669 | -0.0084 | 0.0003 | 0.0015 | 0.0148 |
| 0.035 | 2.0 | 0.0046 | 0.0088 | 0.684 | -0.0083 | 0.0003 | 0.0051 | 0.0143 |
| 0.039 | 2.2 | 0.0063 | 0.0102 | 0.700 | -0.0083 | 0.0003 | 0.0244 | 0.0140 |
| 0.044 | 2.4 | 0.0081 | 0.0118 | 0.716 | -0.0083 | 0.0002 | 0.0619 | 0.0137 |
| 0.050 | 2.6 | 0.0100 | 0.0134 | 0.733 | -0.0083 | 0.0002 | -0.0053 | 0.0138 |
| 0.056 | 2.8 | 0.0119 | 0.0152 | 0.751 | -0.0083 | 0.0002 | -0.0036 | 0.0137 |
| 0.063 | 3.0 | 0.0139 | 0.0170 | 0.771 | -0.0081 | 0.0002 | 0.0047 | 0.0140 |
| 0.071 | 3.2 | 0.0160 | 0.0189 | 0.792 | -0.0079 | 0.0002 | 0.0315 | 0.0140 |
| 0.079 | 3.4 | 0.0181 | 0.0209 | 0.815 | -0.0075 | 0.0002 | 0.0397 | 0.0141 |
| 0.089 | 3.6 | 0.0203 | 0.0229 | 0.839 | -0.0070 | 0.0002 | 0.0173 | 0.0141 |
| 0.101 | 3.8 | 0.0226 | 0.0250 | 0.862 | -0.0065 | 0.0002 | 0.0361 | 0.0142 |
| 0.113 | 4.0 | 0.0249 | 0.0272 | 0.884 | -0.0058 | 0.0002 | 0.0403 | 0.0142 |
| 0.128 | 4.2 | 0.0273 | 0.0294 | 0.904 | -0.0052 | 0.0002 | 0.0019 | 0.0146 |
| 0.144 | 4.4 | 0.0298 | 0.0317 | 0.923 | -0.0045 | 0.0002 | 0.0388 | 0.0150 |
| 0.162 | 4.6 | 0.0323 | 0.0340 | 0.941 | -0.0038 | 0.0002 | 0.0292 | 0.0156 |
| 0.182 | 4.7 | 0.0347 | 0.0362 | 0.960 | -0.0030 | 0.0002 | 0.0315 | 0.0163 |
| 0.205 | 4.9 | 0.0371 | 0.0384 | 0.982 | -0.0020 | 0.0002 | 0.0454 | 0.0171 |
| 0.230 | 5.0 | 0.0394 | 0.0405 | 1.007 | -0.0008 | 0.0002 | 0.0453 | 0.0179 |
| 0.259 | 5.2 | 0.0417 | 0.0425 | 1.033 | 0.0005 | 0.0002 | 0.0334 | 0.0187 |
| 0.292 | 5.3 | 0.0439 | 0.0444 | 1.057 | 0.0018 | 0.0002 | 0.0535 | 0.0202 |
| 0.328 | 5.5 | 0.0459 | 0.0462 | 1.075 | 0.0029 | 0.0002 | 0.0419 | 0.0222 |
| 0.370 | 5.6 | 0.0474 | 0.0475 | 1.083 | 0.0035 | 0.0002 | 0.0573 | 0.0249 |
| 0.416 | 5.7 | 0.0486 | 0.0485 | 1.082 | 0.0038 | 0.0002 | 0.0096 | 0.0281 |
| 0.468 | 5.8 | 0.0494 | 0.0491 | 1.072 | 0.0036 | 0.0001 | 0.1045 | 0.0324 |
| 0.527 | 5.9 | 0.0495 | 0.0490 | 1.058 | 0.0032 | 0.0001 | 0.0792 | 0.0373 |
| 0.593 | 6.0 | 0.0488 | 0.0479 | 1.039 | 0.0027 | 0.0001 | 0.0642 | 0.0428 |

Table 24: Final RCs for $2.75^o$ deuteron data.

| $x_{Bj}$ | $Q^2$ | $A_{fit}^{Born}$ | $A_{fit}^{rad}$ | $f_{RC}$ | $A_{RC}$ | $\sigma_{A_{RC}}$ | $A_{meas}^{Born}$ | $\sigma_{A^{Born}}$ |
|---|---|---|---|---|---|---|---|---|
| 0.057 | 4.0 | 0.0190 | 0.0250 | 0.657 | -0.0192 | 0.0004 | -0.2366 | 0.1198 |
| 0.063 | 4.4 | 0.0227 | 0.0287 | 0.687 | -0.0190 | 0.0004 | 0.0351 | 0.0531 |
| 0.071 | 4.8 | 0.0270 | 0.0329 | 0.720 | -0.0188 | 0.0004 | 0.0017 | 0.0340 |
| 0.080 | 5.3 | 0.0317 | 0.0377 | 0.755 | -0.0181 | 0.0004 | -0.0099 | 0.0254 |
| 0.090 | 5.8 | 0.0370 | 0.0429 | 0.791 | -0.0172 | 0.0004 | -0.0071 | 0.0212 |
| 0.101 | 6.3 | 0.0428 | 0.0486 | 0.826 | -0.0160 | 0.0004 | 0.0631 | 0.0191 |
| 0.113 | 6.9 | 0.0489 | 0.0546 | 0.859 | -0.0147 | 0.0004 | 0.0177 | 0.0182 |
| 0.128 | 7.4 | 0.0557 | 0.0612 | 0.888 | -0.0132 | 0.0004 | 0.0475 | 0.0177 |
| 0.144 | 8.0 | 0.0629 | 0.0681 | 0.914 | -0.0117 | 0.0004 | 0.0734 | 0.0177 |
| 0.162 | 8.6 | 0.0705 | 0.0754 | 0.937 | -0.0100 | 0.0004 | 0.0575 | 0.0181 |
| 0.182 | 9.2 | 0.0786 | 0.0832 | 0.959 | -0.0081 | 0.0004 | 0.0690 | 0.0189 |
| 0.205 | 9.9 | 0.0868 | 0.0909 | 0.981 | -0.0058 | 0.0004 | 0.0575 | 0.0197 |
| 0.230 | 10.5 | 0.0953 | 0.0989 | 1.004 | -0.0031 | 0.0004 | 0.1030 | 0.0206 |
| 0.259 | 11.1 | 0.1039 | 0.1069 | 1.027 | -0.0001 | 0.0005 | 0.0853 | 0.0219 |
| 0.292 | 11.7 | 0.1122 | 0.1146 | 1.043 | 0.0024 | 0.0005 | 0.1396 | 0.0238 |
| 0.328 | 12.4 | 0.1200 | 0.1217 | 1.066 | 0.0058 | 0.0004 | 0.1191 | 0.0259 |
| 0.370 | 13.0 | 0.1272 | 0.1283 | 1.073 | 0.0076 | 0.0004 | 0.1460 | 0.0289 |
| 0.416 | 13.5 | 0.1334 | 0.1339 | 1.077 | 0.0090 | 0.0004 | 0.0994 | 0.0331 |
| 0.468 | 14.1 | 0.1380 | 0.1379 | 1.073 | 0.0095 | 0.0004 | 0.1223 | 0.0388 |
| 0.526 | 14.6 | 0.1408 | 0.1401 | 1.063 | 0.0089 | 0.0003 | 0.1379 | 0.0468 |
| 0.592 | 15.1 | 0.1406 | 0.1395 | 1.053 | 0.0082 | 0.0003 | 0.2417 | 0.0578 |
| 0.666 | 15.6 | 0.1367 | 0.1352 | 1.045 | 0.0073 | 0.0002 | 0.1925 | 0.0736 |
| 0.749 | 16.0 | 0.1273 | 0.1257 | 1.033 | 0.0056 | 0.0001 | 0.0399 | 0.0975 |
| 0.843 | 16.4 | 0.1115 | 0.1105 | 1.017 | 0.0028 | 0.0002 | 0.2318 | 0.1438 |

Table 25: Final RCs for $5.5^o$ deuteron data.

| $x_{Bj}$ | $Q^2$ | $A_{fit}^{Born}$ | $A_{fit}^{rad}$ | $f_{RC}$ | $A_{RC}$ | $\sigma_{A_{RC}}$ | $A_{meas}^{Born}$ | $\sigma_{A^{Born}}$ |
|---|---|---|---|---|---|---|---|---|
| 0.129 | 10.1 | 0.0749 | 0.0856 | 0.798 | -0.0323 | 0.0007 | -0.0144 | 0.2173 |
| 0.144 | 11.2 | 0.0867 | 0.0980 | 0.843 | -0.0296 | 0.0007 | 0.0355 | 0.0999 |
| 0.162 | 12.4 | 0.1005 | 0.1124 | 0.888 | -0.0260 | 0.0008 | 0.1838 | 0.0661 |
| 0.182 | 13.8 | 0.1162 | 0.1286 | 0.933 | -0.0216 | 0.0008 | 0.1204 | 0.0518 |
| 0.205 | 15.2 | 0.1342 | 0.1468 | 0.975 | -0.0163 | 0.0009 | 0.1207 | 0.0486 |
| 0.230 | 16.8 | 0.1534 | 0.1657 | 1.013 | -0.0103 | 0.0009 | 0.0565 | 0.0493 |
| 0.259 | 18.4 | 0.1745 | 0.1862 | 1.043 | -0.0041 | 0.0009 | 0.1822 | 0.0538 |
| 0.291 | 20.1 | 0.1975 | 0.2084 | 1.071 | 0.0028 | 0.0009 | 0.2242 | 0.0603 |
| 0.328 | 22.0 | 0.2215 | 0.2312 | 1.089 | 0.0092 | 0.0009 | 0.1597 | 0.0657 |
| 0.369 | 23.8 | 0.2457 | 0.2538 | 1.098 | 0.0145 | 0.0009 | 0.3629 | 0.0759 |
| 0.415 | 26.1 | 0.2727 | 0.2793 | 1.095 | 0.0176 | 0.0009 | 0.1892 | 0.1001 |
| 0.465 | 28.4 | 0.2972 | 0.3020 | 1.088 | 0.0195 | 0.0008 | 0.2964 | 0.1536 |
| 0.525 | 30.4 | 0.3157 | 0.3182 | 1.075 | 0.0196 | 0.0007 | 0.2192 | 0.2516 |
| 0.590 | 32.7 | 0.3310 | 0.3314 | 1.063 | 0.0191 | 0.0006 | -0.4962 | 0.3916 |
| 0.666 | 35.2 | 0.3364 | 0.3348 | 1.050 | 0.0176 | 0.0005 | -0.0721 | 0.6704 |
| 0.744 | 37.6 | 0.3305 | 0.3278 | 1.039 | 0.0149 | 0.0003 | 0.2451 | 1.2626 |
| 0.850 | 39.9 | 0.2965 | 0.2942 | 1.023 | 0.0091 | 0.0005 | 4.4928 | 2.8838 |

Table 26: Final RCs for $10.5^o$ deuteron data.

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