Double Longitudinal Asymmetry Results

Summary

Data: Proton double longitudinal asymmetry

$$A_{\parallel} = \frac{\sigma^{\downarrow\Uparrow} - \sigma^{\uparrow\Uparrow}}{\sigma^{\downarrow\Uparrow} + \sigma^{\uparrow\Uparrow}}$$

Luminosity: 100 fb-1, 2% error

Polarization: $P = 0.7$, 1% error for electron
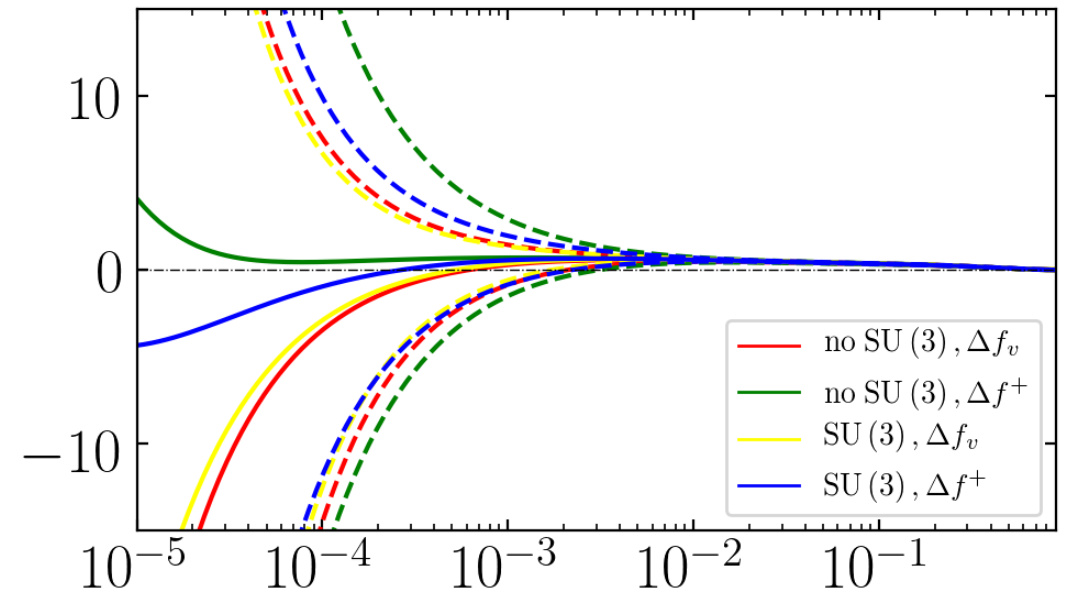$P = 0.7$, 2% error for proton

Further systematic errors:
Optimistic: No further errors
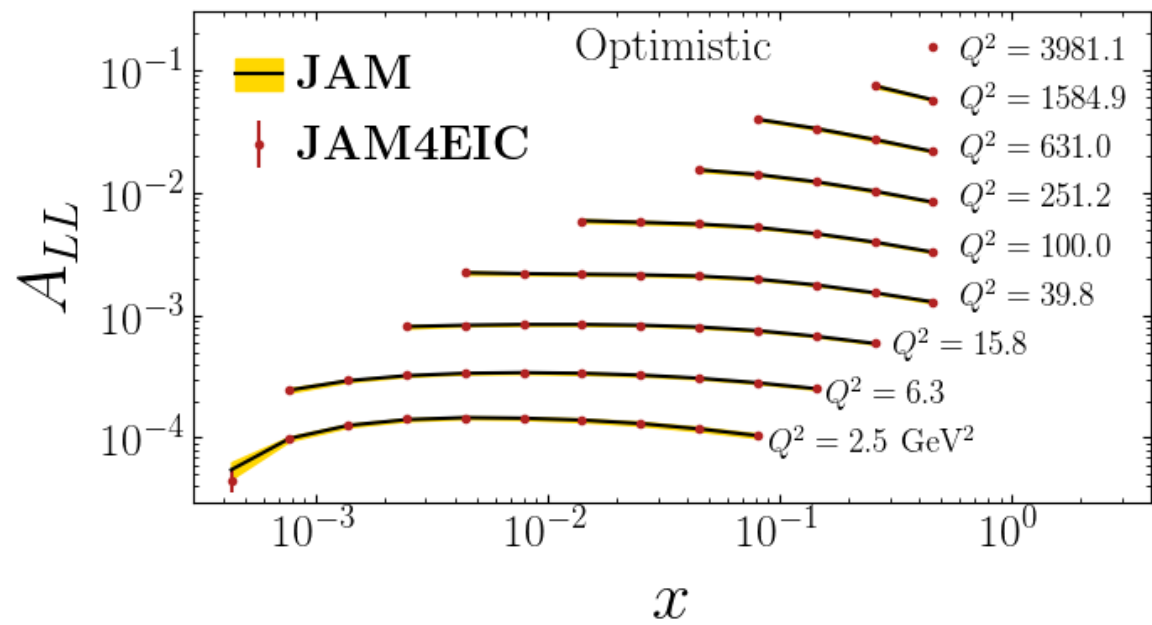**Moderate:** ???
Pessimistic: ???

Parameterizations:
1. Valence, no SU(3) (large negative g_1 at low x)
2. Plus,   no SU(3) (small positive g_1 at low x)
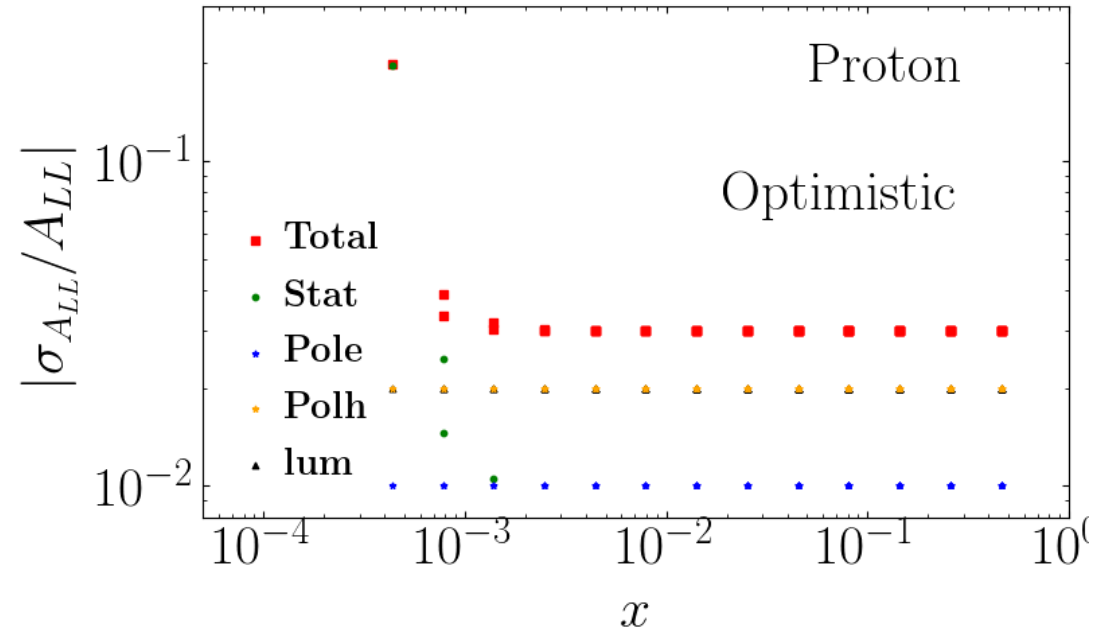
Valence Parameterization Results

Asymmetry

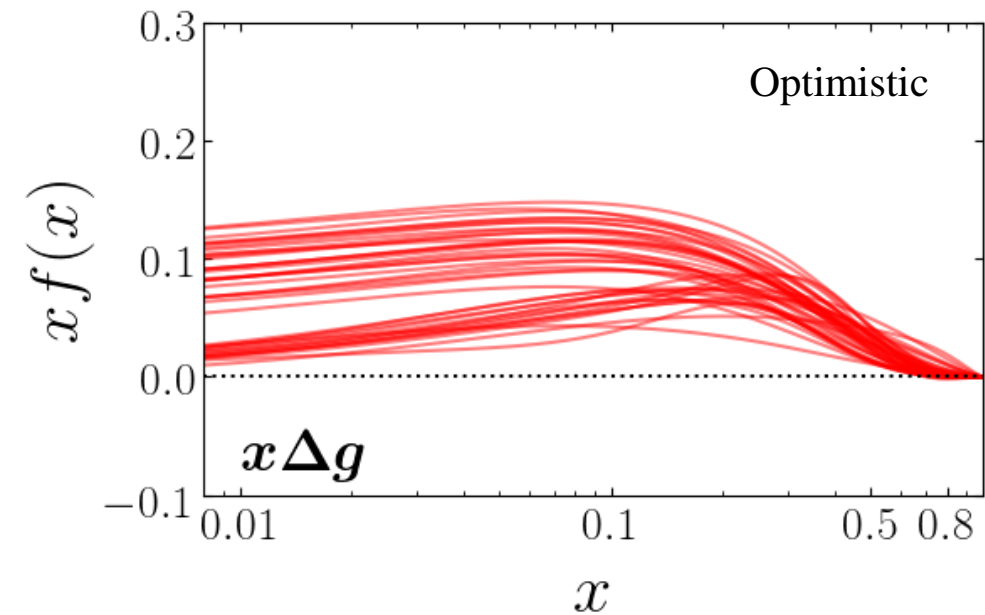*(Moderate goes here)*

(Pessimistic goes here)

Errors

(Moderate goes here)

(Pessimistic goes here)

(No EIC goes here)

Gluon Distribution (Q2=10)

Optimistic

$xf(x)$

$x\Delta g$

x

(Moderate goes here)

(Pessimistic goes here)

No EIC

$xf(x)$

$x\Delta g$

x

Gluon Standard Deviation

Plus Parameterization Results

Asymmetry

(Moderate goes here)

(Pessimistic goes here)
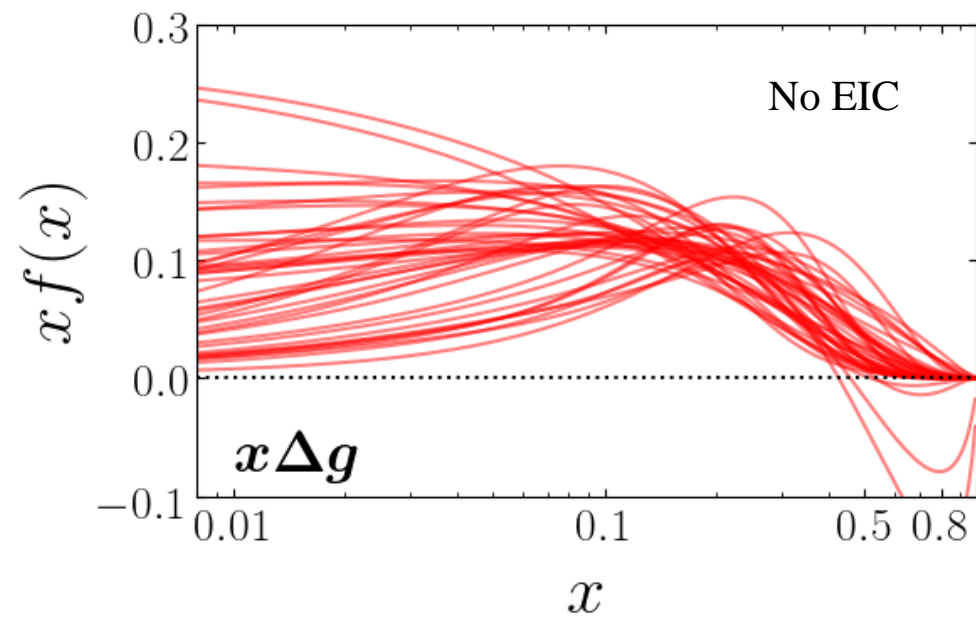
Errors

(Moderate goes here)
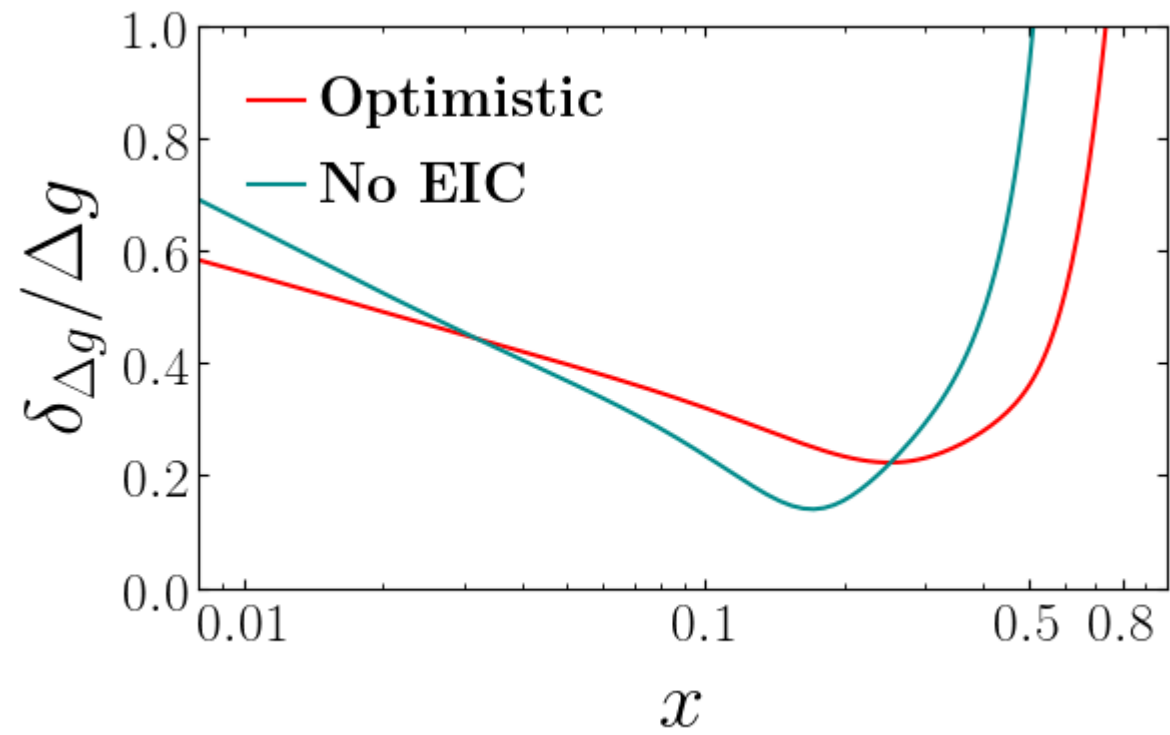
(Pessimistic goes here)

Gluon Distribution (Q2=10)

Optimistic

(Moderate goes here)

No EIC

(Pessimistic goes here)

Gluon Standard Deviation