Pion-LT/Kaon-LT Collaboration Meeting

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LTSep Analysis

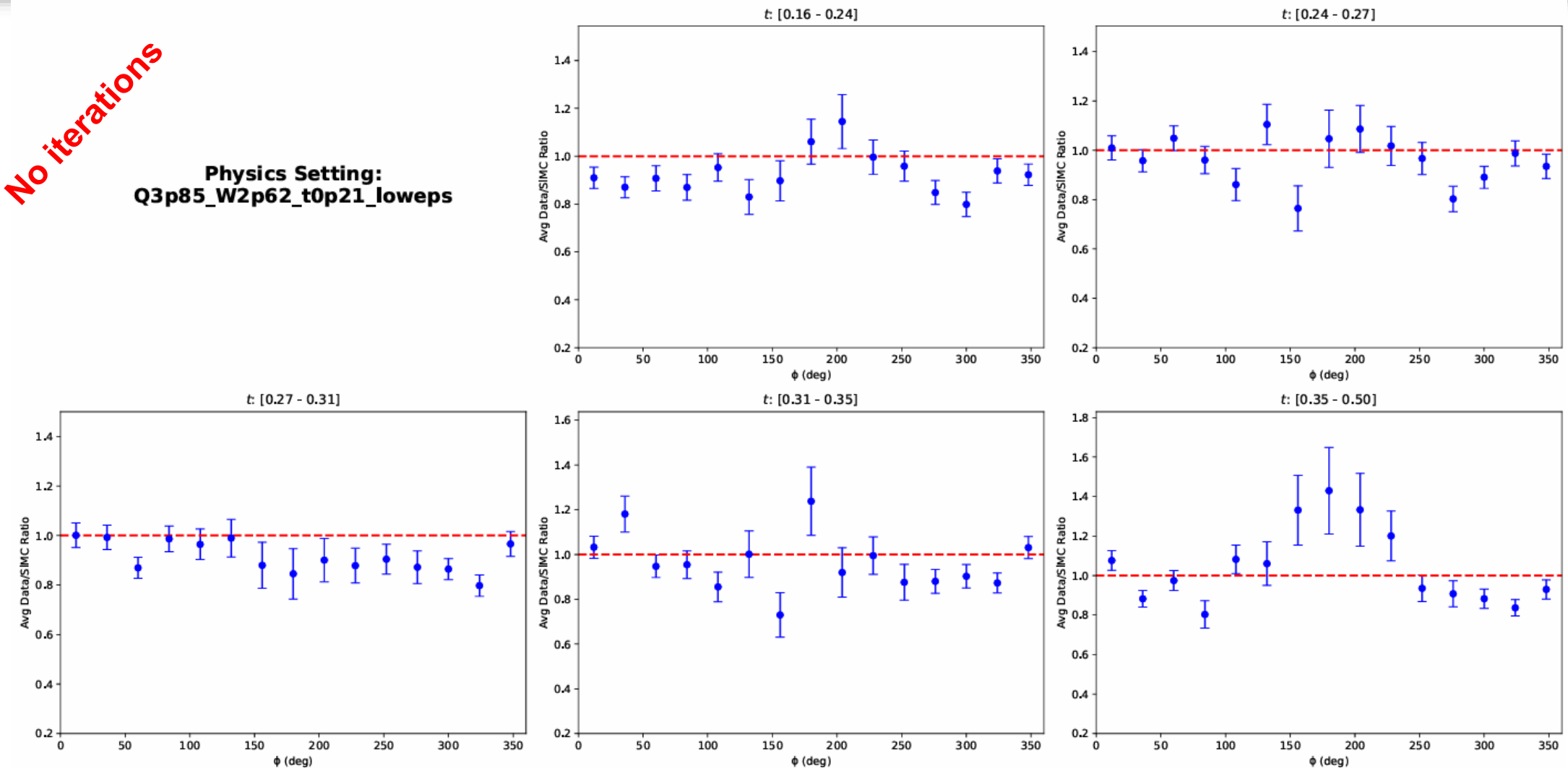
- **Next steps are listed as follows:**
  - **Unseparated cross-section calculations**
  - **Model iterations**
  - **Rosenbluth equation fitting**
  - **L/T separated cross-section calculations**
  - **Pion Form Factor measurements**

Iteration Std

Physics Ratios

No iterations

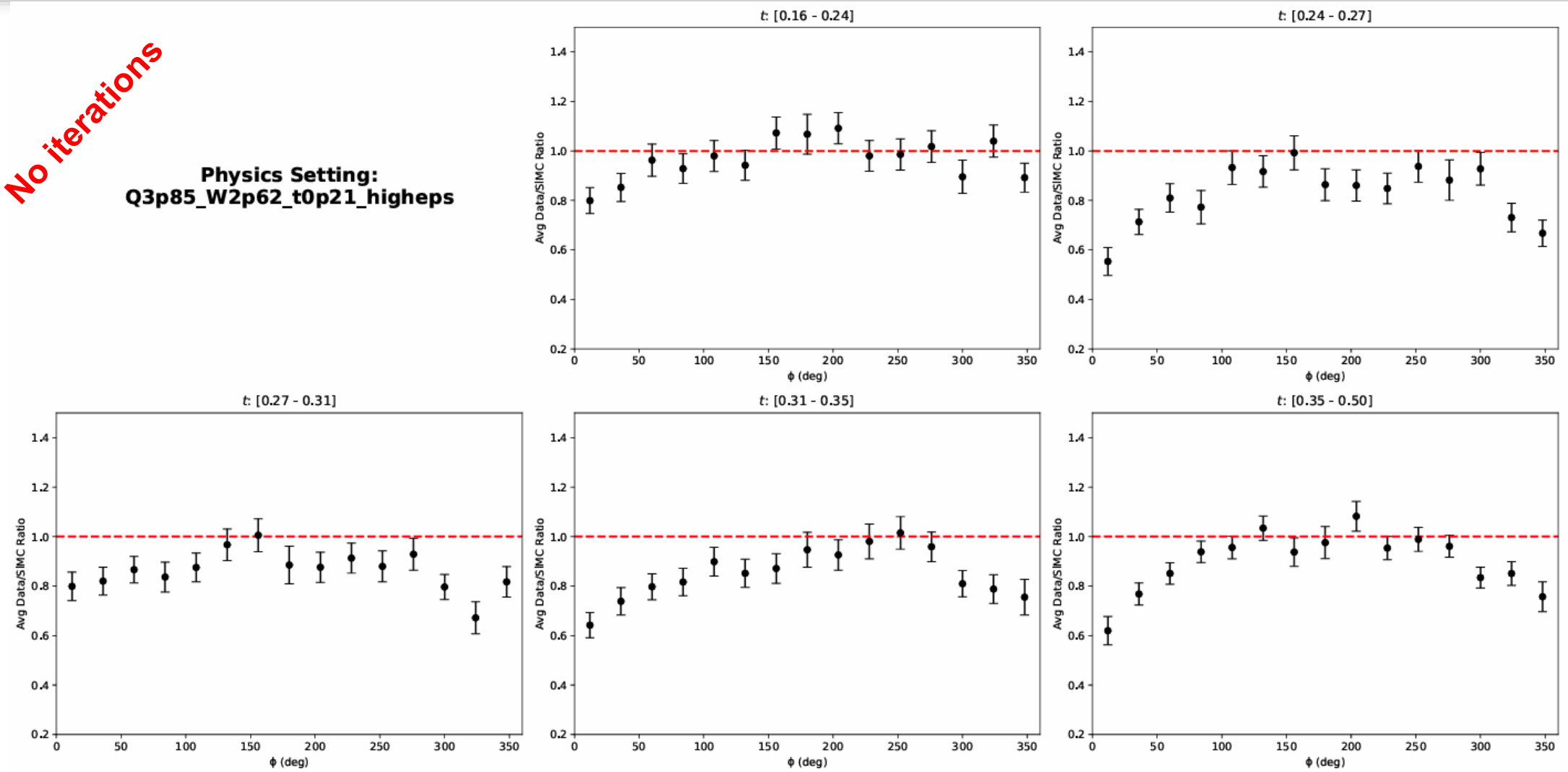
Physics Setting:
Q3p85_W2p62_t0p21_loweps



Physics Ratios

No iterations

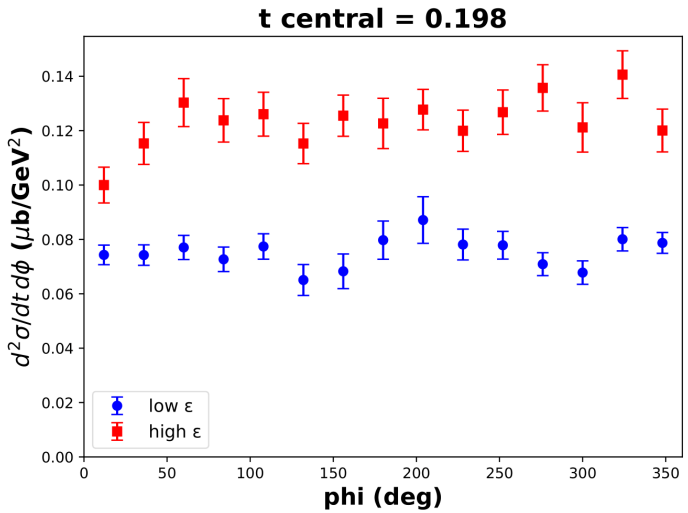
Physics Setting:
Q3p85_W2p62_t0p21_higheps

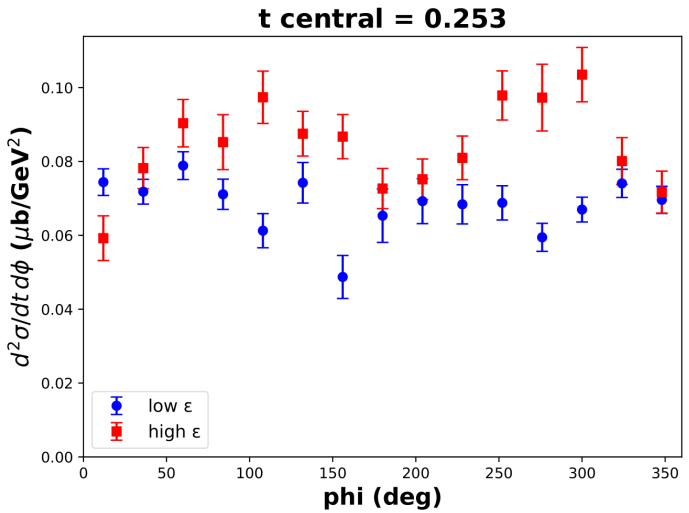


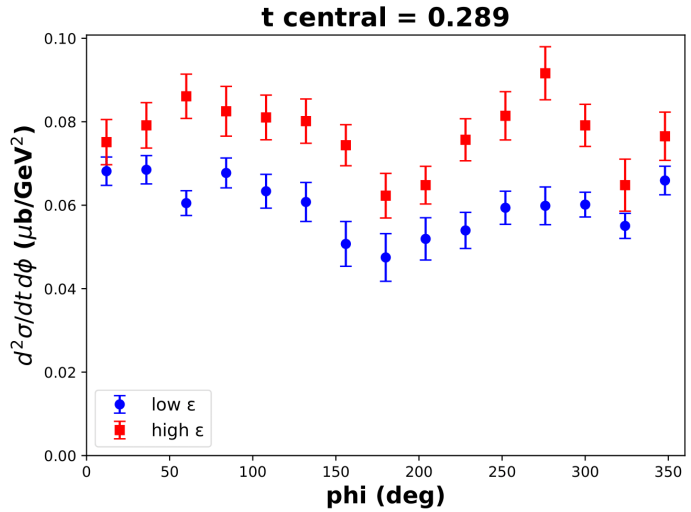
Un-separated Cross-sections

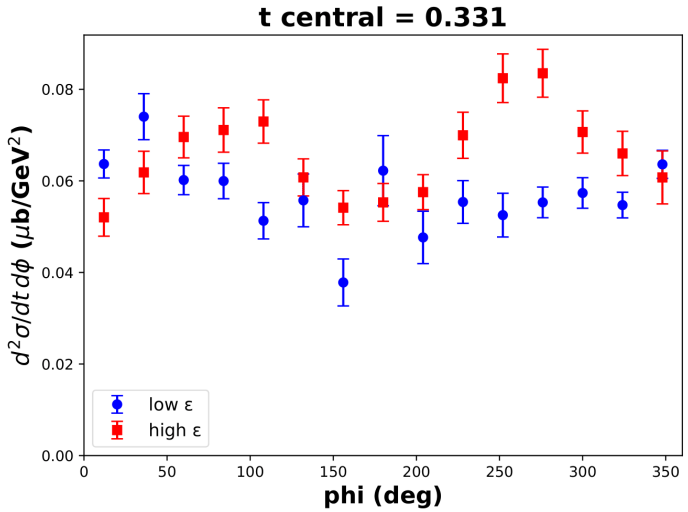
No iterations

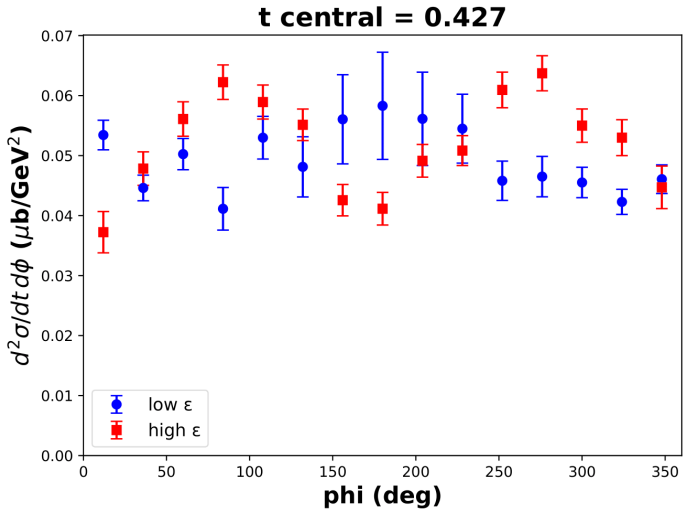
Physics Setting:
Q3p85_W2p62_t0p21
Iteration: 0







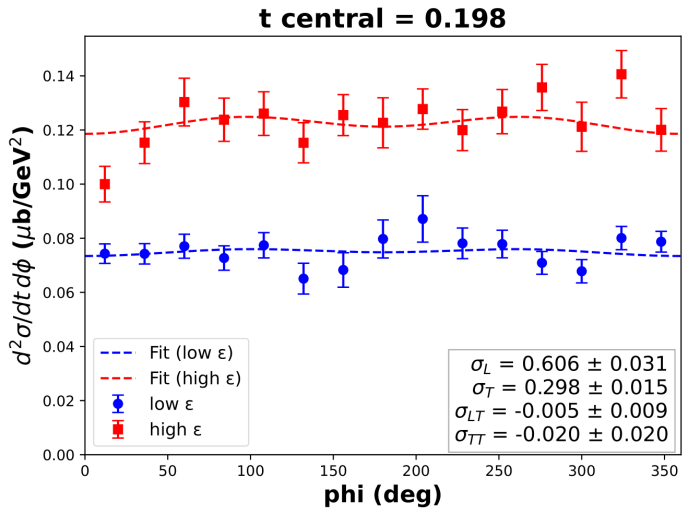


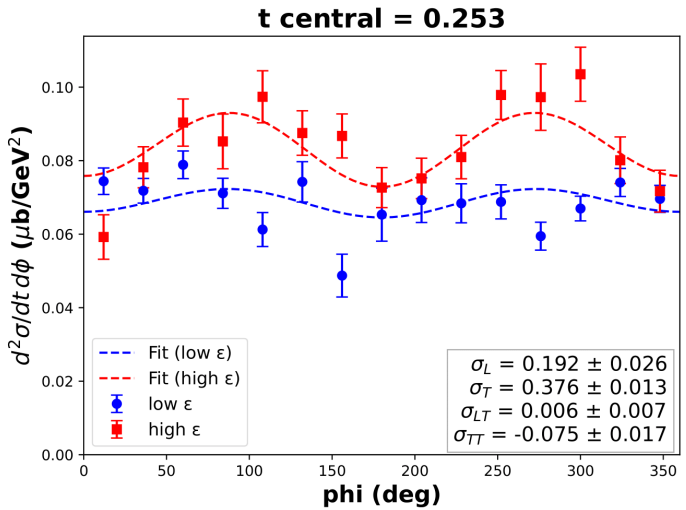


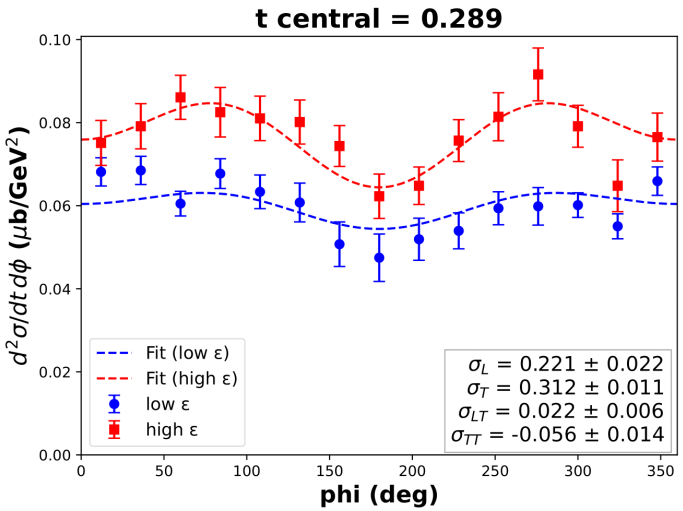
LT-separated Cross-sections

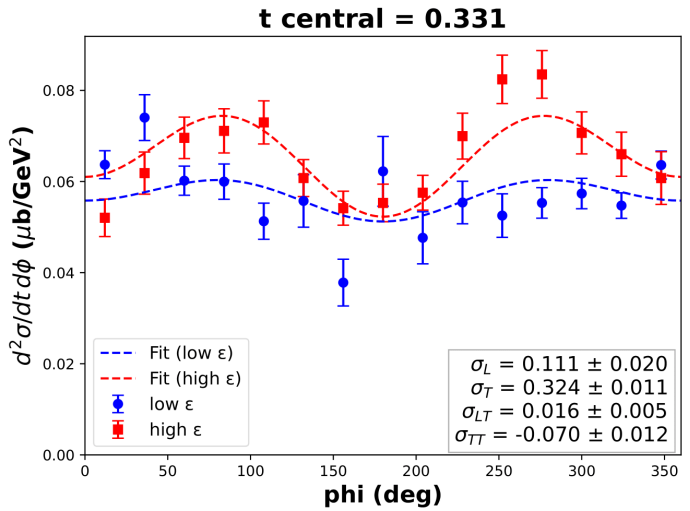
No iterations

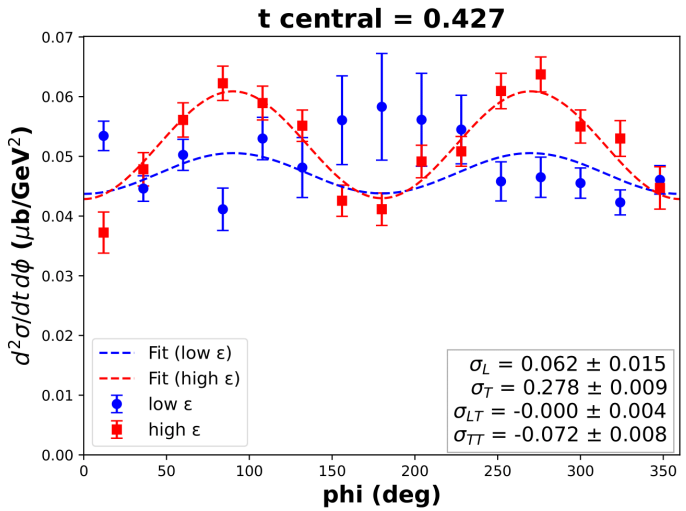
Physics Setting:
Q3p85_W2p62_t0p21
Iteration: 0





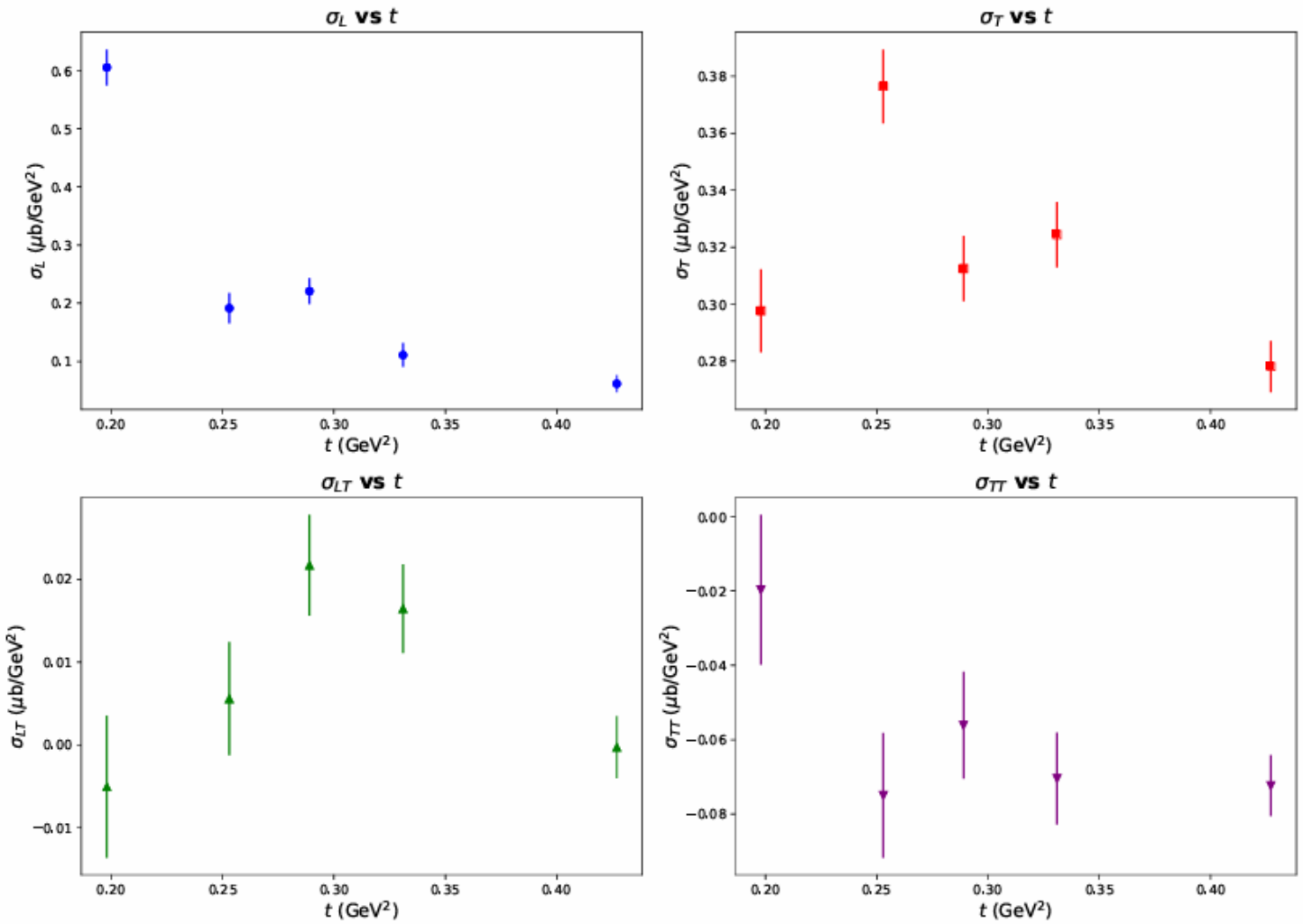






LT-separated Cross-sections

No iterations



Fpi2 Model Functions

LTSep Functions

- Started with Tanja's functional forms:

$$\frac{d\sigma_T}{dt} = \frac{p1}{Q^2} + \frac{p2}{Q^4}$$

$$\frac{d\sigma_L}{dt} = p5\,\frac{Q^2}{(1 + p8 \cdot Q^2 + p9 \cdot Q^4)^2}\, e^{(p6 - p7 \cdot \ln(Q^2)) \cdot |-t|}$$

$$\frac{d\sigma_{LT}}{dt} = \left(e^{p10 + \frac{p11}{\sqrt{Q^2}} \cdot |-t|} + p12 + \frac{p13}{Q^4} \right) \cdot \sin(\theta^*)$$

$$\frac{d\sigma_{TT}}{dt} = \frac{p14}{Q^4} \cdot \frac{|-t|}{(|-t| + m_\pi^2)^2} \cdot \sin(\theta^*)^2$$

In σ_L, fixed p7, p8 and p9.

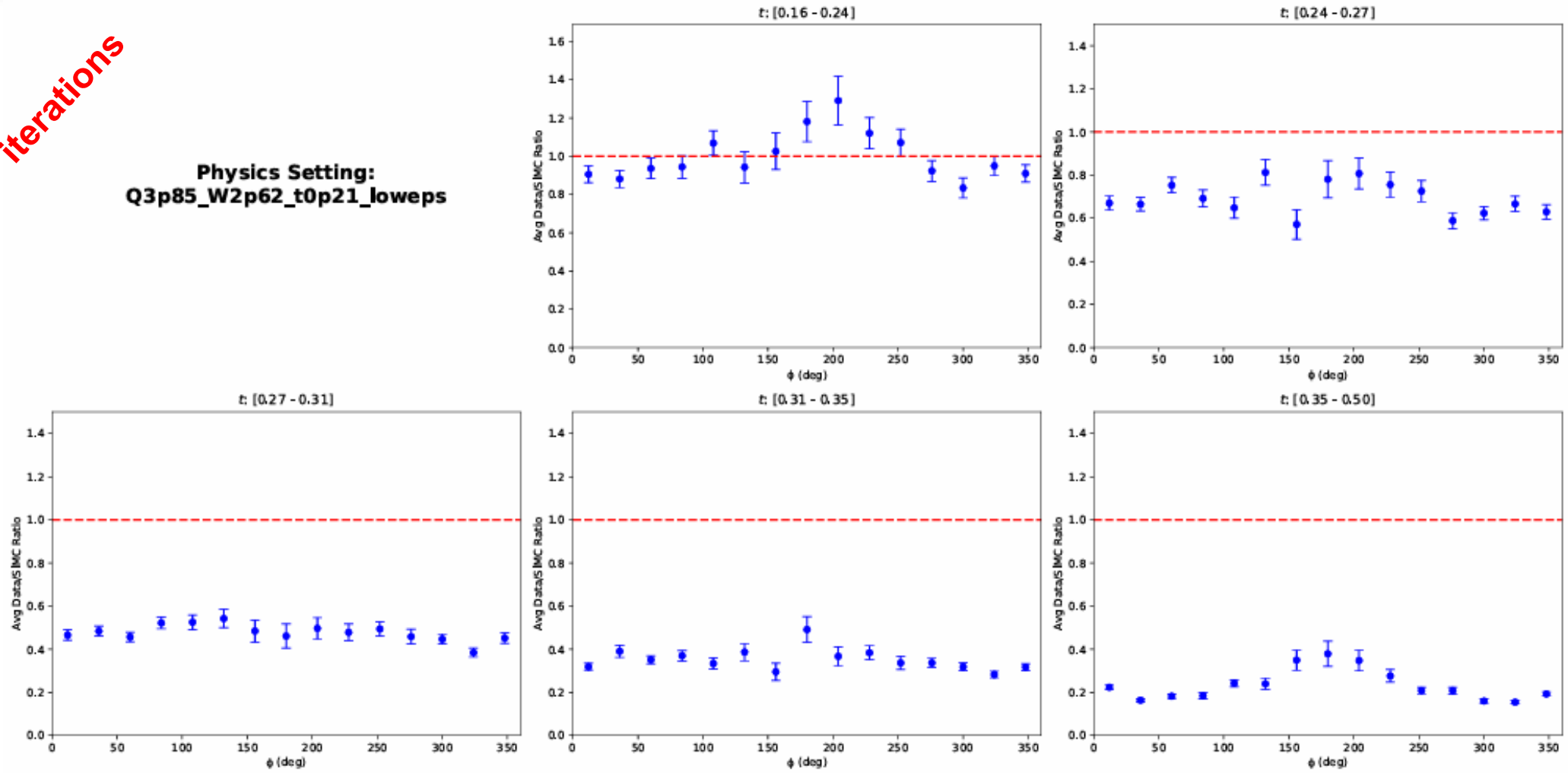
Parameter	Initial Values (Fpi2)	Final Values (Fpi2)
p1	3.9	
p2	5.8	
p5	214	
p6	8.6	
p7	0.7	
P8	1.77	
P9	0.05	
p10	3.98	
p11	-0.8	
p12	0.7	
p13	22.5	
p14	14.9	

Iteration 00

Physics Ratios

0th iterations

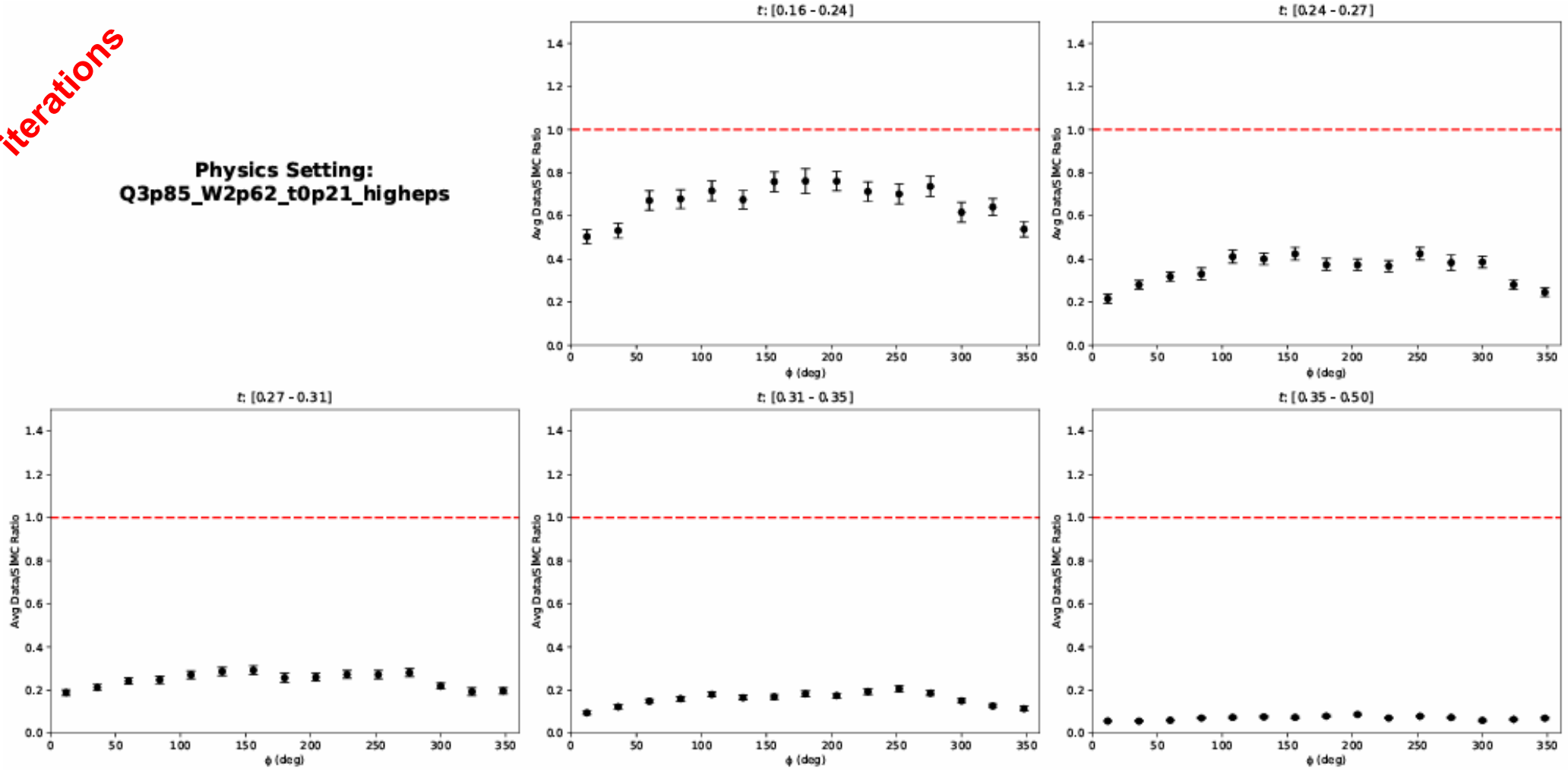
Physics Setting:
Q3p85_W2p62_t0p21_loweps



Physics Ratios

0th iterations

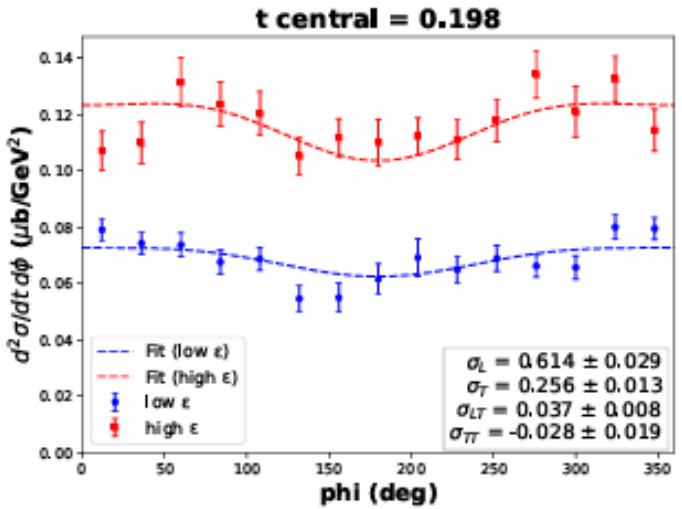
Physics Setting:
Q3p85_W2p62_t0p21_higheps

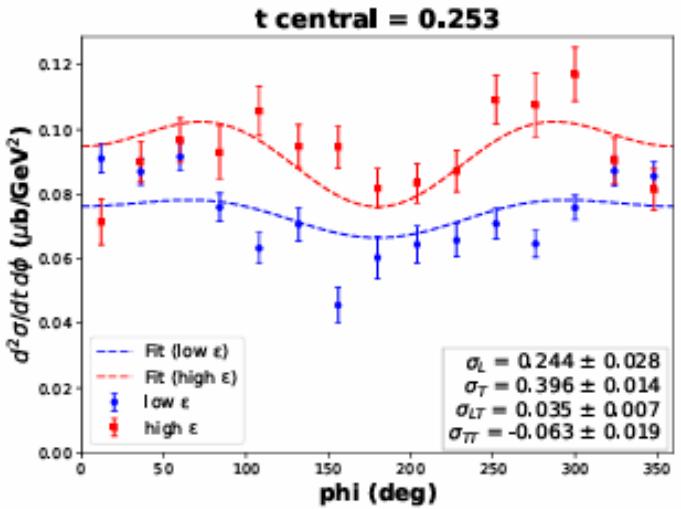


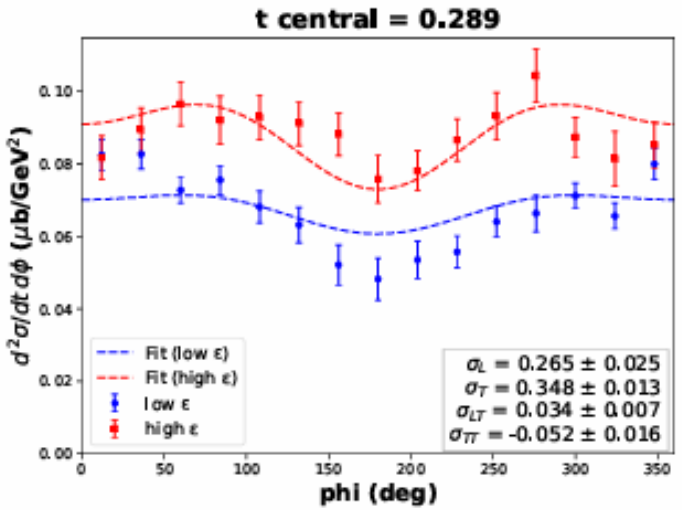
Un-separated Cross-sections

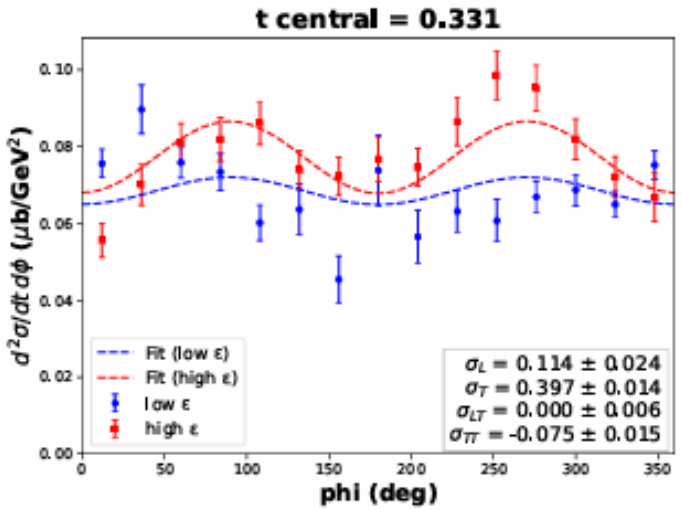
0th iterations

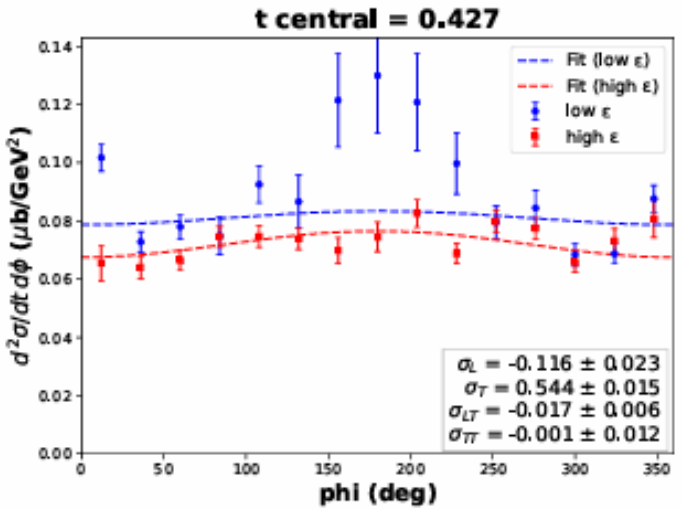
Physics Setting:
Q3p85_W2p62_t0p21
Iteration: 00





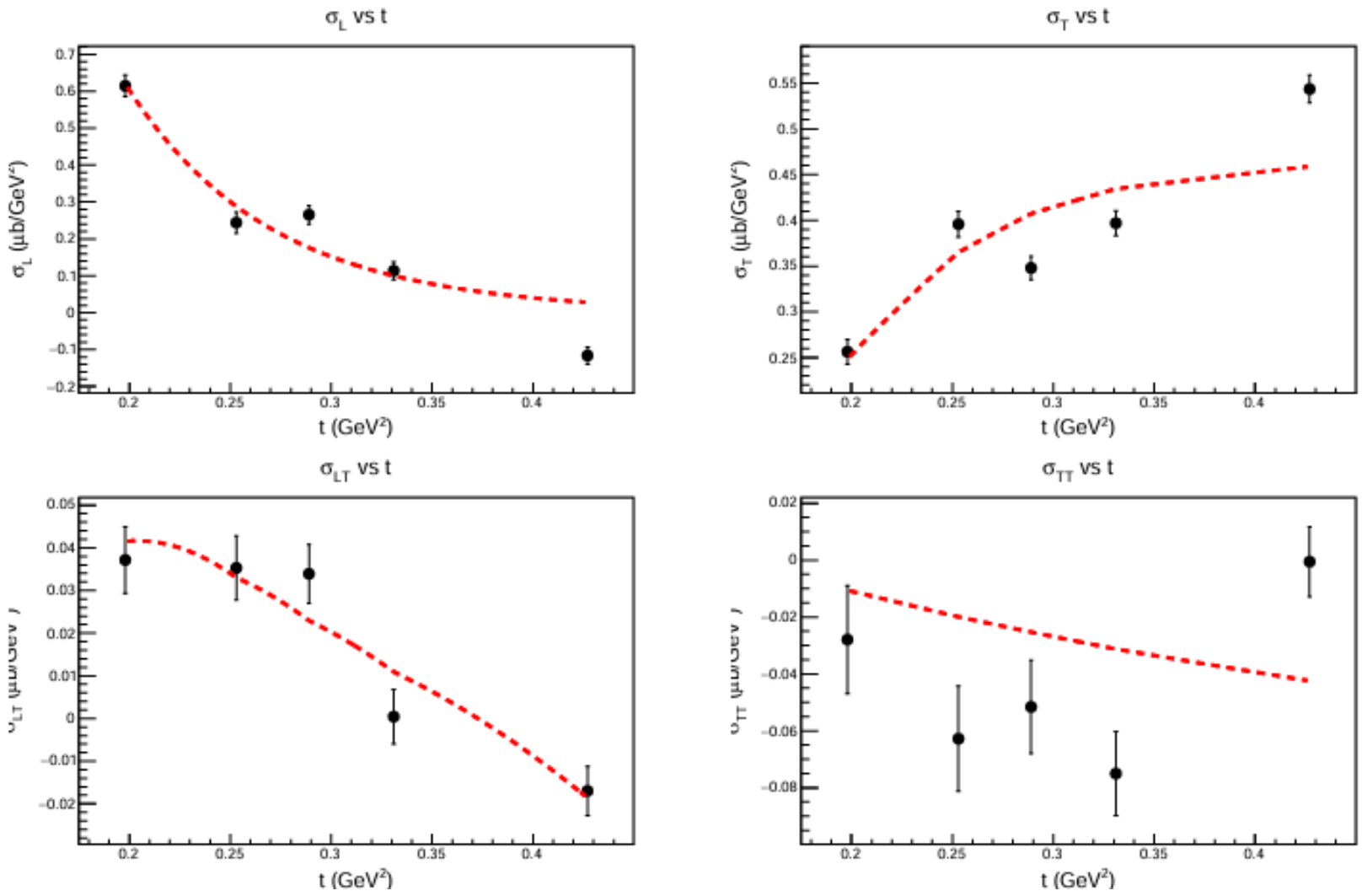






LT-separated Cross-sections

0th iterations



LTSep Analysis

- **Working on physics setting: "Q2 = 3.85, W = 2.62, t = 0.21 (2 epsilons)"**

- **The following studies have been finalized for Pion Form Factor measurement:**
  - **Unseparated cross-section calculations**
  - **Model iterations**
  - **Rosenbluth equation fitting**
  - **L/T separated cross-section calculations**

- **In progress:**
  - Checking the implementation of the correct error calculation method
  - Checking Implementation of functional fits to LT-separated cross-sections.
  - Checking the weight re-calculation script.
  - Will start doing model iterations.