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**

New Model Functions V7

LTSep Functions

☐ **Started with functional forms (with SIMC W_factor):**

$$\frac{d\sigma_T}{dt} = \left(\frac{p1}{Q^2}\right) \cdot e^{(p2\ Q^2)} \cdot e^{(p3\ |t|)}$$

$$\frac{d\sigma_L}{dt} = (p5 + p6/Q^2) \cdot \frac{|t|}{(|t| + m_\pi^2)^2} \cdot Q^2 e^{(p7|t|)} F_\pi^2$$

Where, $F_\pi = \dfrac{1}{(1 + p8 \cdot Q^2 + p9 \cdot Q^4)}$

$$\frac{d\sigma_{LT}}{dt} = \left(\frac{p10}{1 + p11\ Q^2} \cdot \frac{|t|}{(|t| + m_\pi^2)^2} + \frac{p12}{|t|^2}\right) \cdot \sin(\theta^*)$$

$$\frac{d\sigma_{TT}}{dt} = \left(\frac{p14}{1 + Q^2} \cdot e^{(p15|t|)} + \frac{p16}{|t|^3}\right) \cdot \sin(\theta^*)^2$$

> In σ_L, fixed p8 and p9
> In σ_{LT}, fixed p10
> In σ_{TT}, fixed p14

Parameter	Initial Values (Fpi2)
p1	3.9
p2	5.8
p5	37.08
p6	-6.35
p7	-4.11
P8	1.6
P9	-0.015
p10	-10000
p11	0.0
p12	0.0
p13	0.0
p14	0.0

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:**

❖ Working on model iterations.