



University
of Regina

Kaon L,T, LT, TT Model Optimization - Towards Data/SIMC ~ 1 -

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KaonLT Meeting
2025/11/21

Iteration 04

L, T, LT, TT Models

$$\frac{d\sigma_T}{dt} = \frac{p_1}{Q^2} + \frac{|t|^{p_2}}{(Q^2 + p_3)^2}$$

$$\frac{d\sigma_L}{dt} = \frac{p_4 e^{-p_5(t-t_{min})}}{(Q^2 + p_6)^2}$$

$$\frac{d\sigma_{LT}}{dt} = \frac{p_7 e^{-p_8(t-t_{min})}}{(Q^2 + p_9)^2} \sin(\theta)$$

$$\frac{d\sigma_{TT}}{dt} = \frac{p_{10} e^{-p_{11}(t-t_{min})}}{(Q^2 + p_{12})^2} \sin^2(\theta)$$

Canceled

Canceled

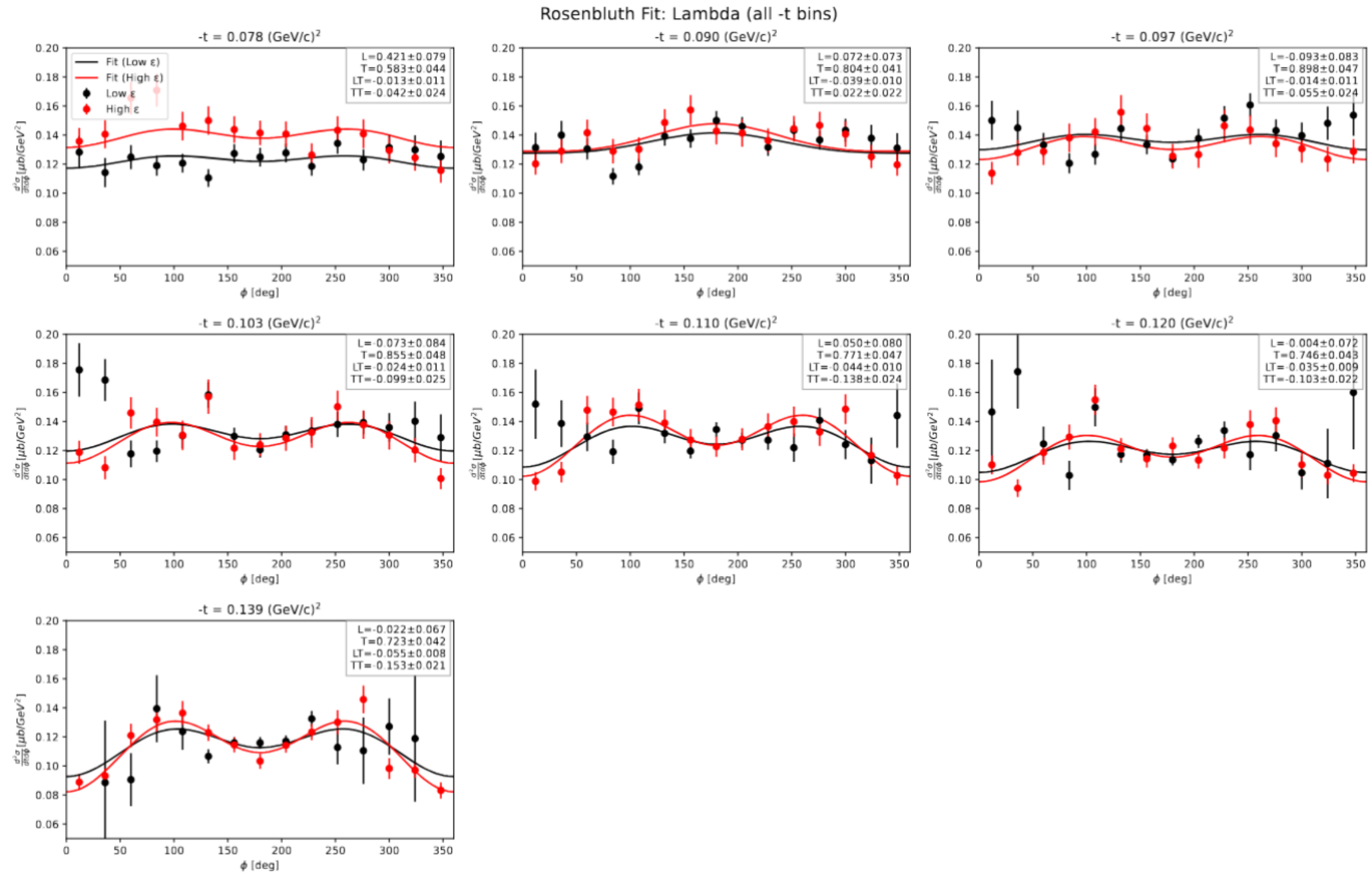
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8.785	0.589	1
0.658	1.422	2
0.161	0.913	3
0.000	0.000	4
0.000	0.000	5
0.000	0.000	6
0.000	0.000	7
0.000	0.000	8
0.000	0.000	9
0.000	0.000	10
0.000	0.000	11
0.000	0.000	12

$$W_{factor} = \frac{1}{(W^2 - m_p^2)^2}$$

$$2\pi \frac{d^2\sigma}{dt d\phi} = \epsilon \frac{d\sigma_L}{dt} + \frac{d\sigma_T}{dt} + \sqrt{2\epsilon(\epsilon + 1)} \frac{d\sigma_{LT}}{dt} \cos\phi + \epsilon \frac{d\sigma_{TT}}{dt} \cos 2\phi$$

Low & High ϵ Simultaneous Fit (Rosenbluth)



L, T, LT, TT Cross Sections

