

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

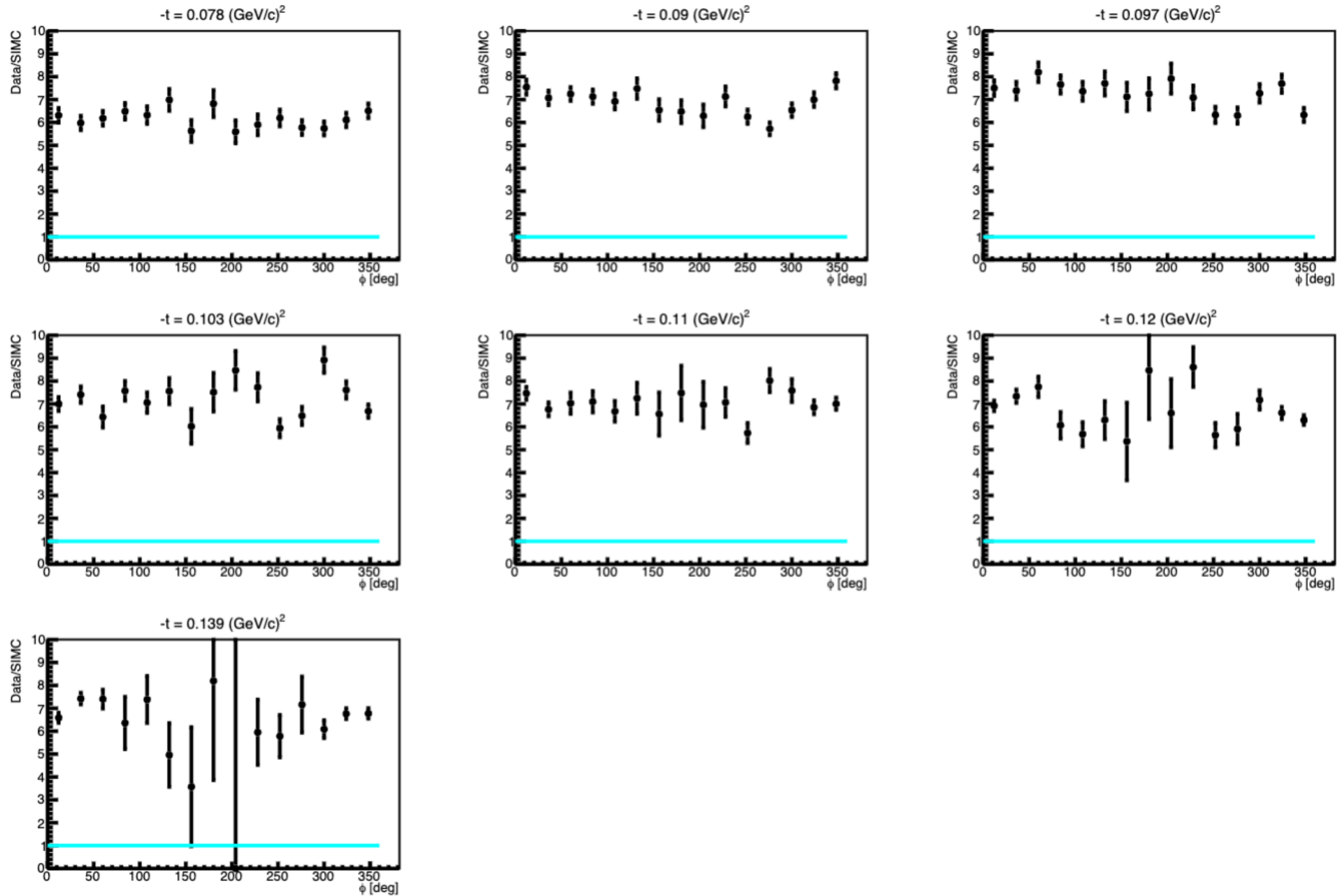
Abdennacer Hamdi

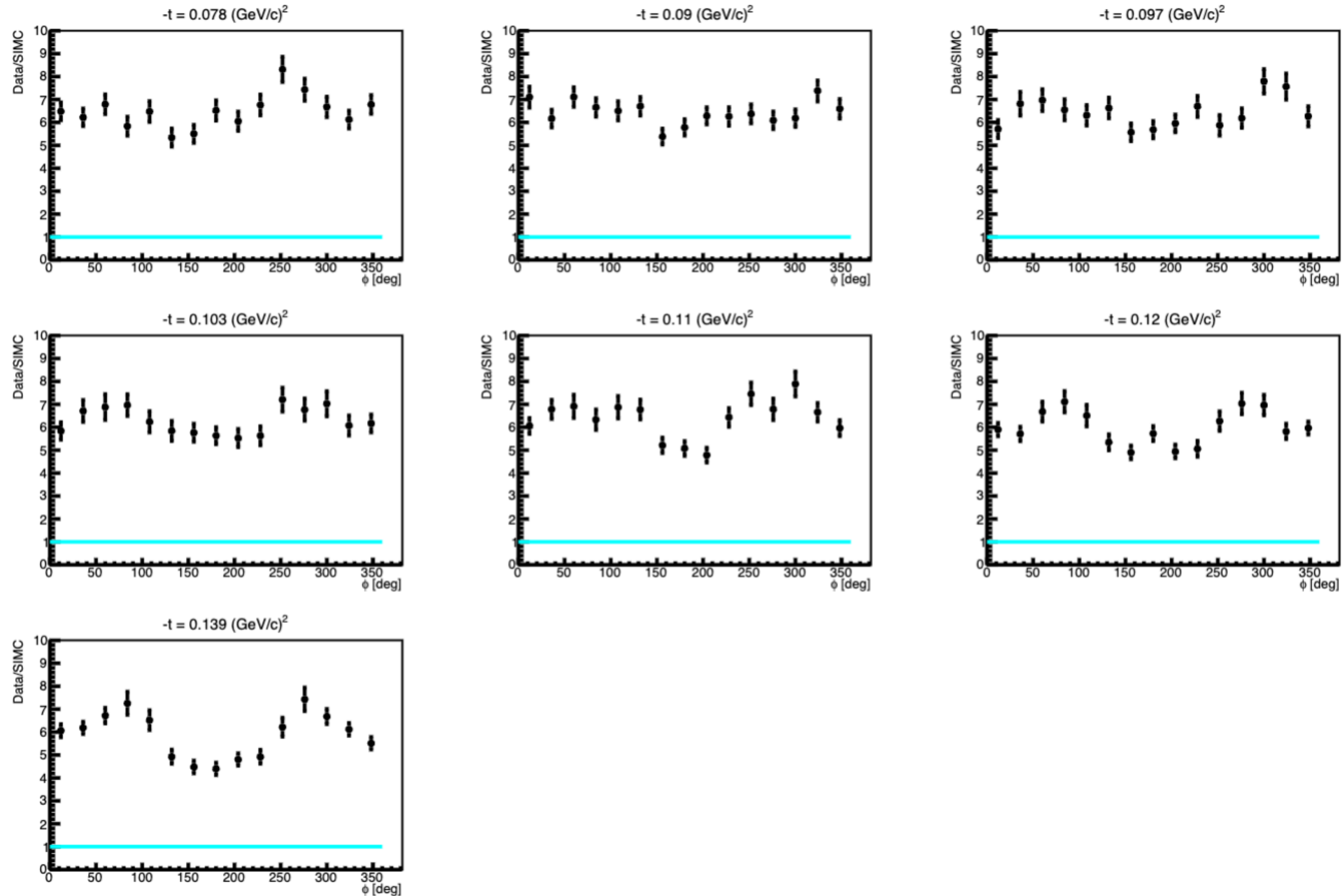
KaonLT Meeting
2025/09/16

- $p(e,e'K+)\Lambda$ and $p(e,e'K+)\Sigma$ cross sections via factorized model described in Tanja Horn's December 2007 report
- model is based on Q^2 , W dependence of Bebek and Brauel data, using Koltenuk fits which are updated to improve epsilon, etc. dependence
- Cross section (at $\theta_{cm}=0$, i.e. $t=t_{min}$) is $F(Q^2)*G(W)$
- The t -dependence at fixed Q^2, W is $h(t)=D*\exp(-b*t)$
- so the cross section is $F(Q^2)*G(W)*(h(t)/h(t_{min}))=F(Q^2)*G(W)*h(t-t_{min})$
- The model requires W , Q^2 , t , pk_{cm} and epsilon

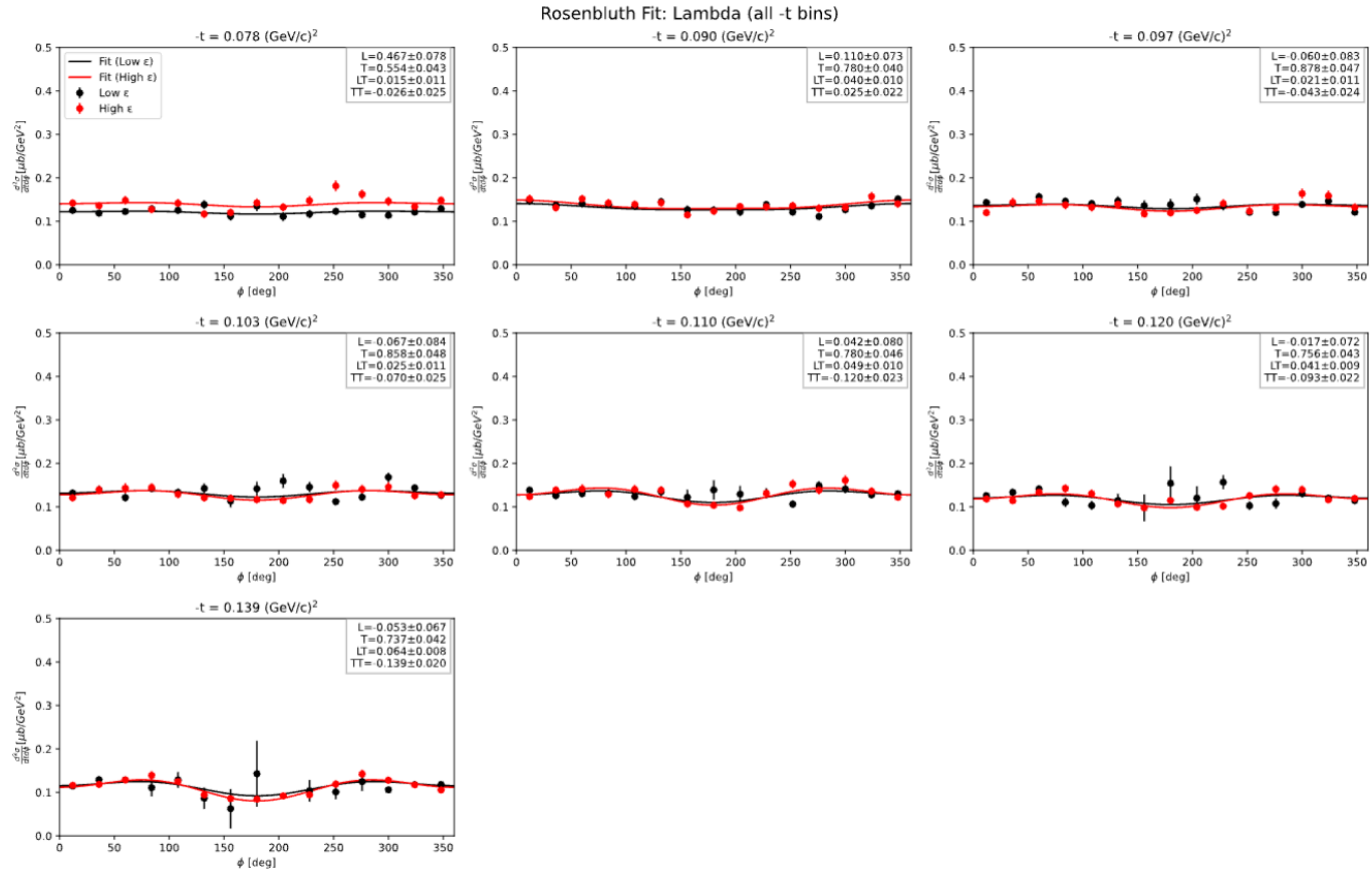
Iteration 00

(initial parameters)

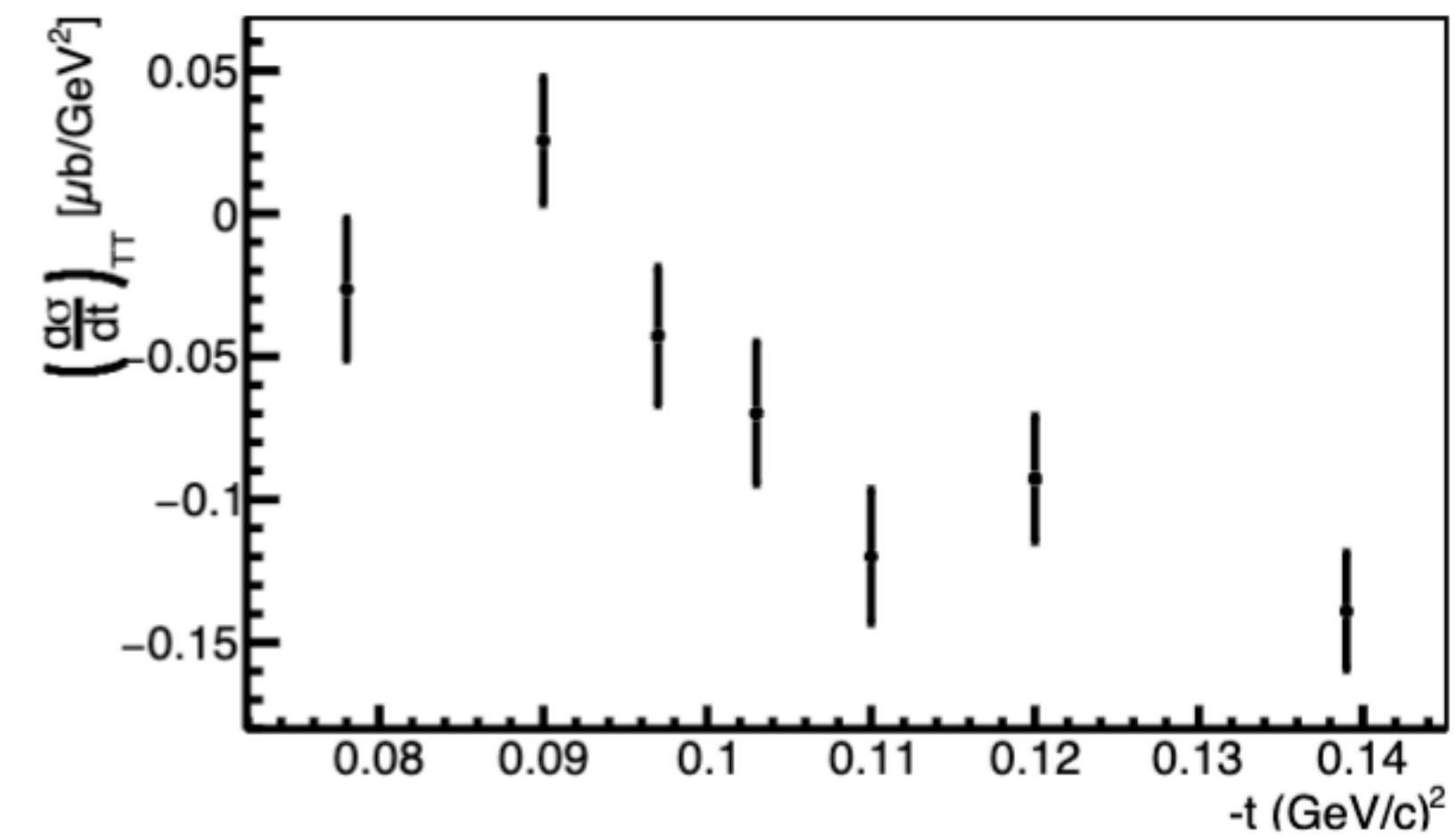
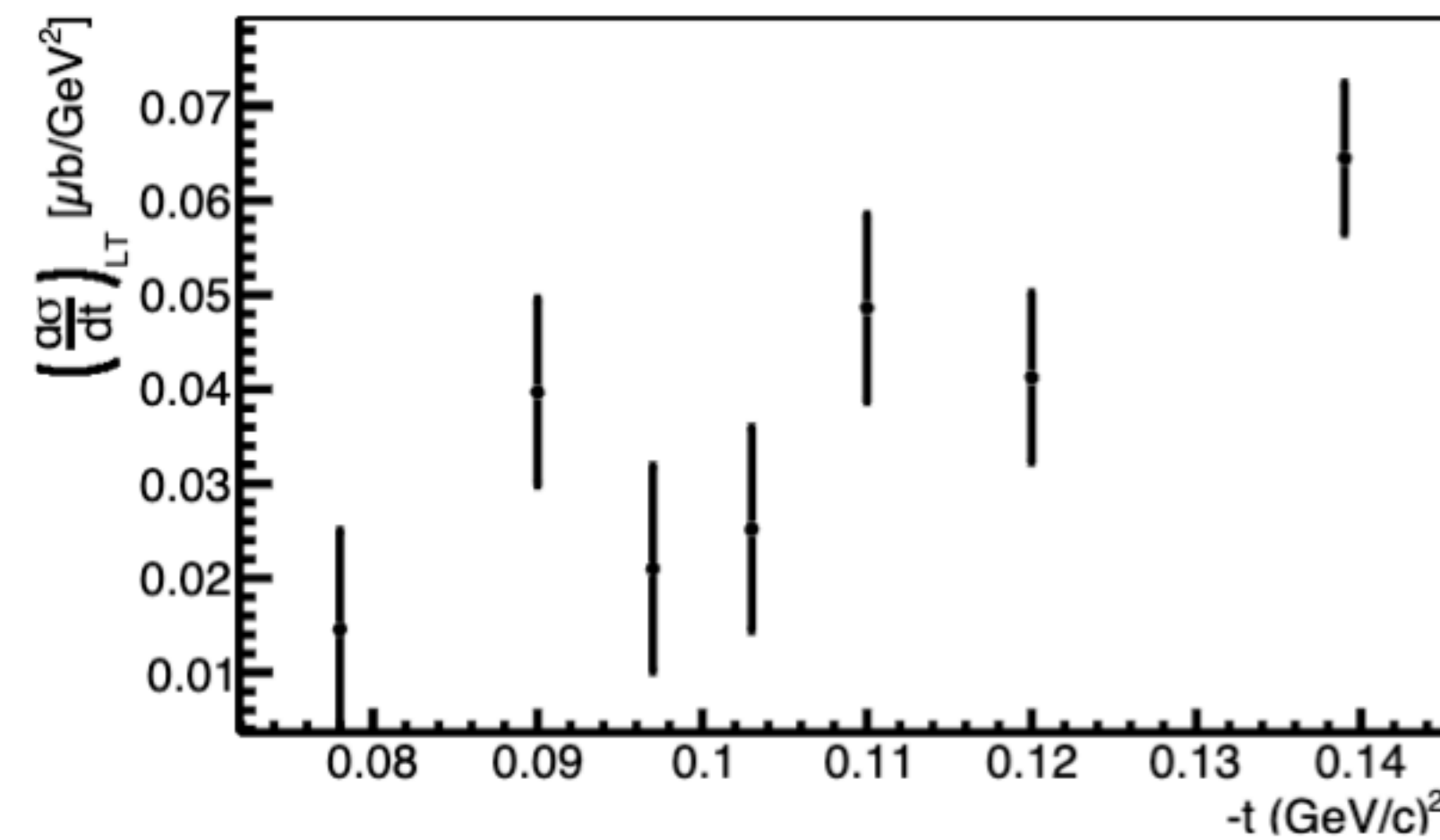
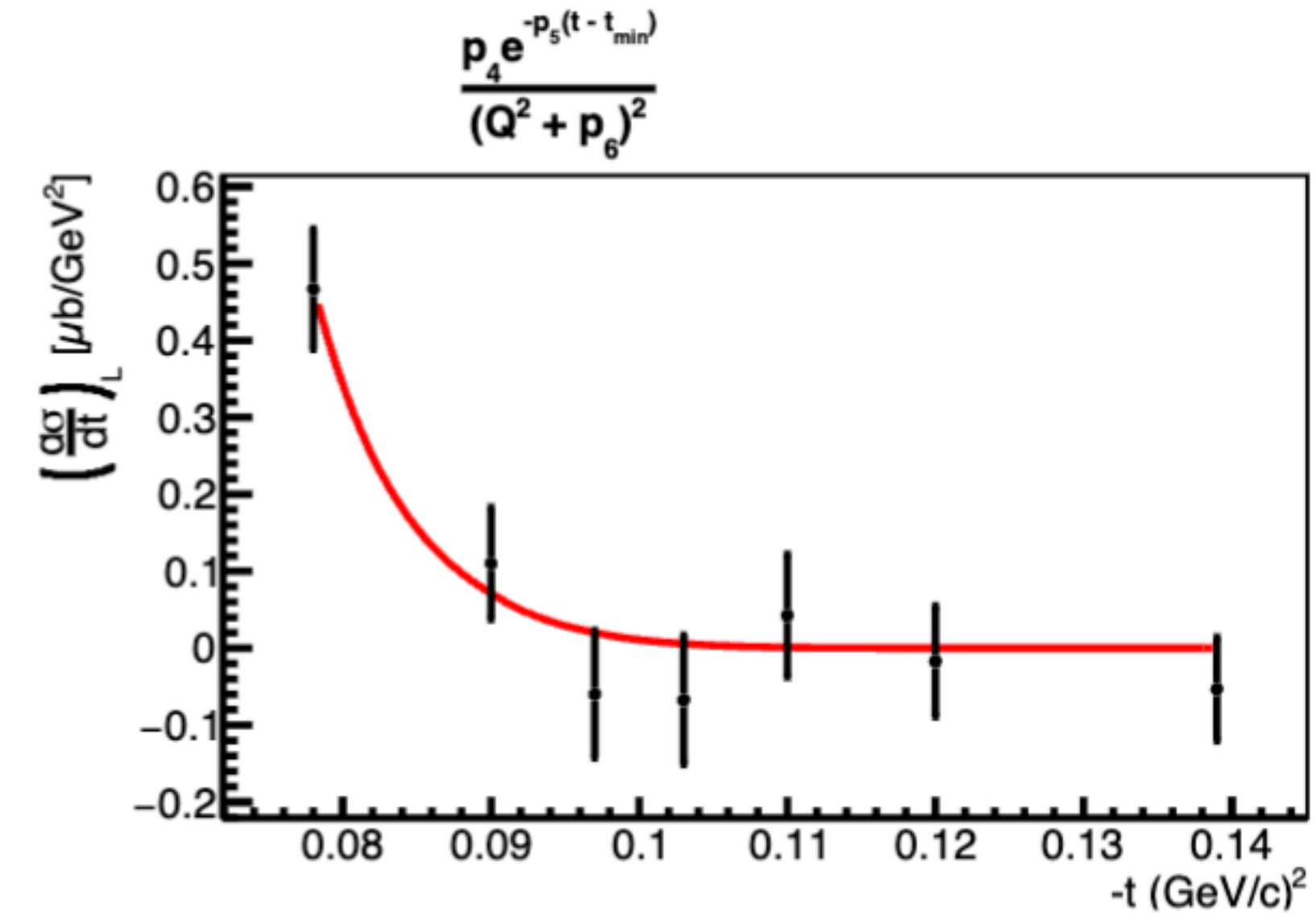
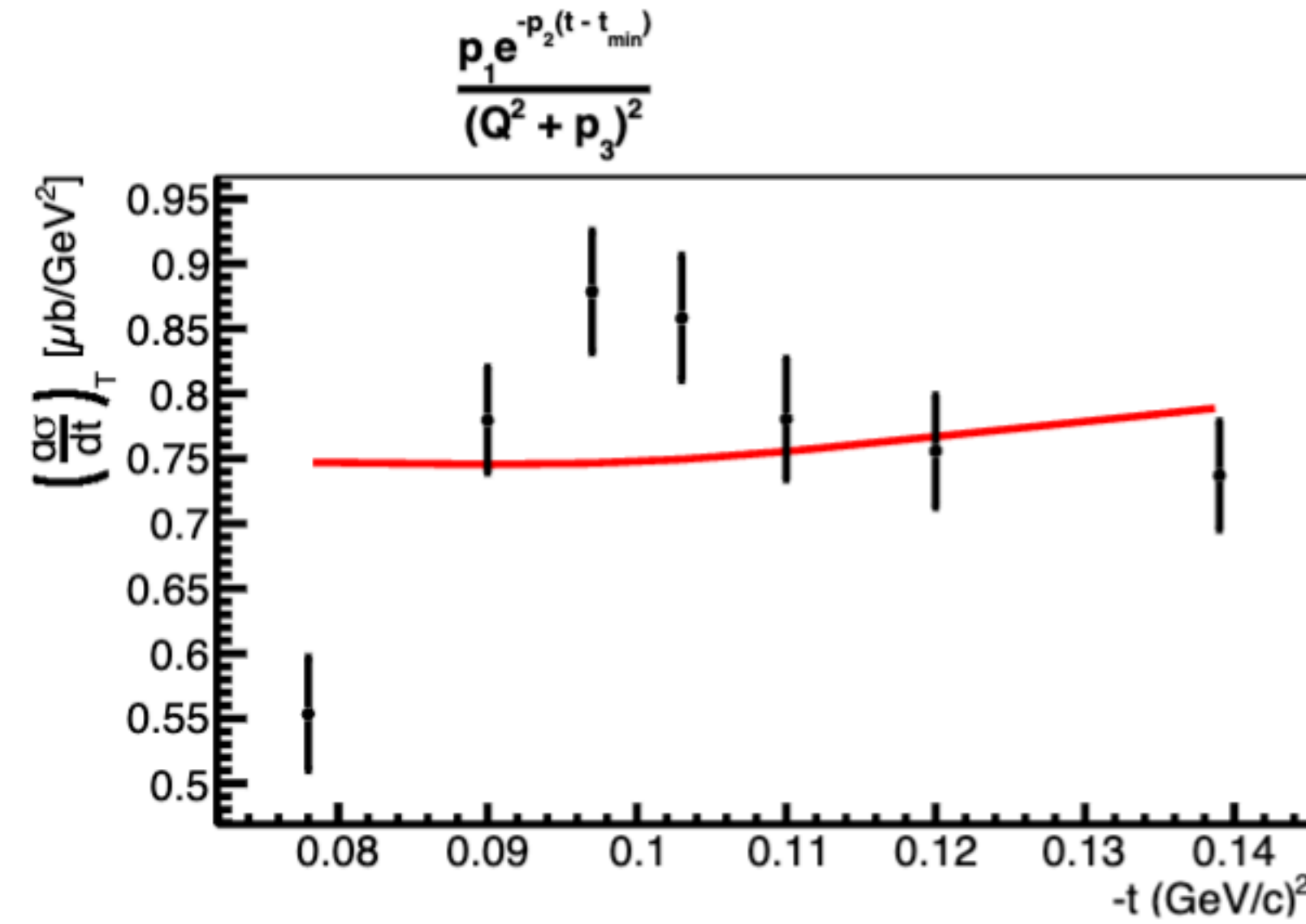




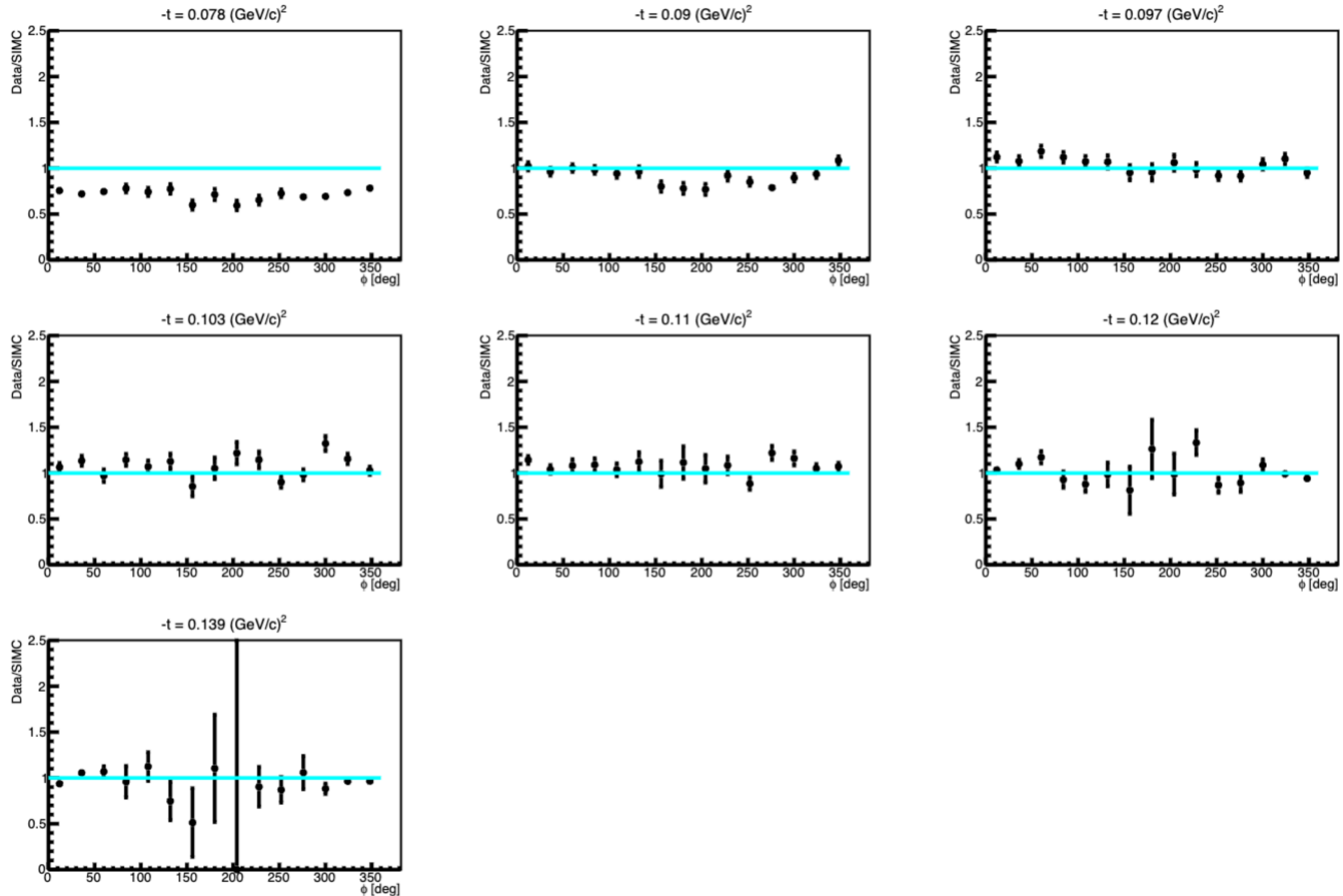
Low & High ϵ Simultaneous Fit (Rosenbluth)

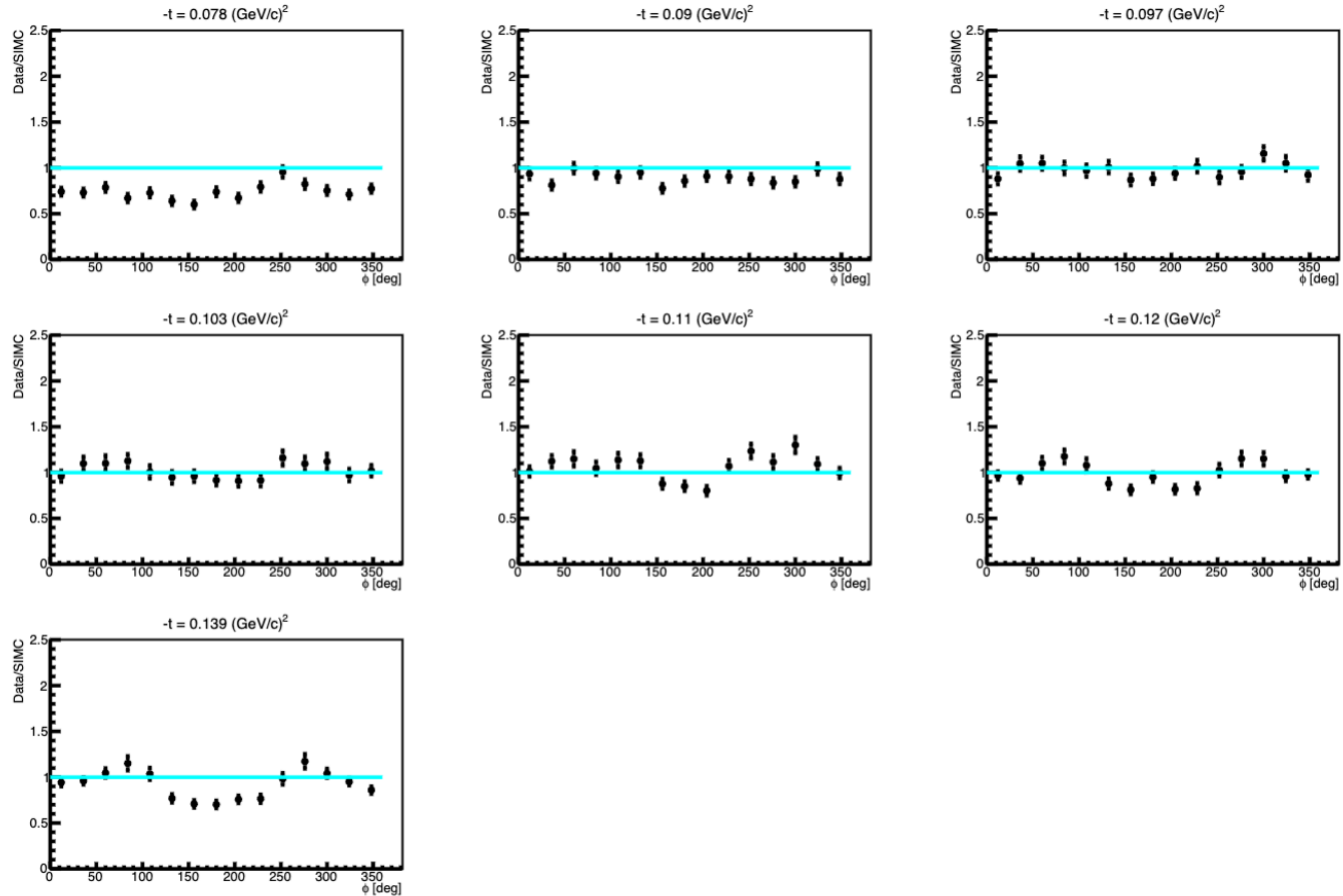


L, T, LT, TT Cross Sections

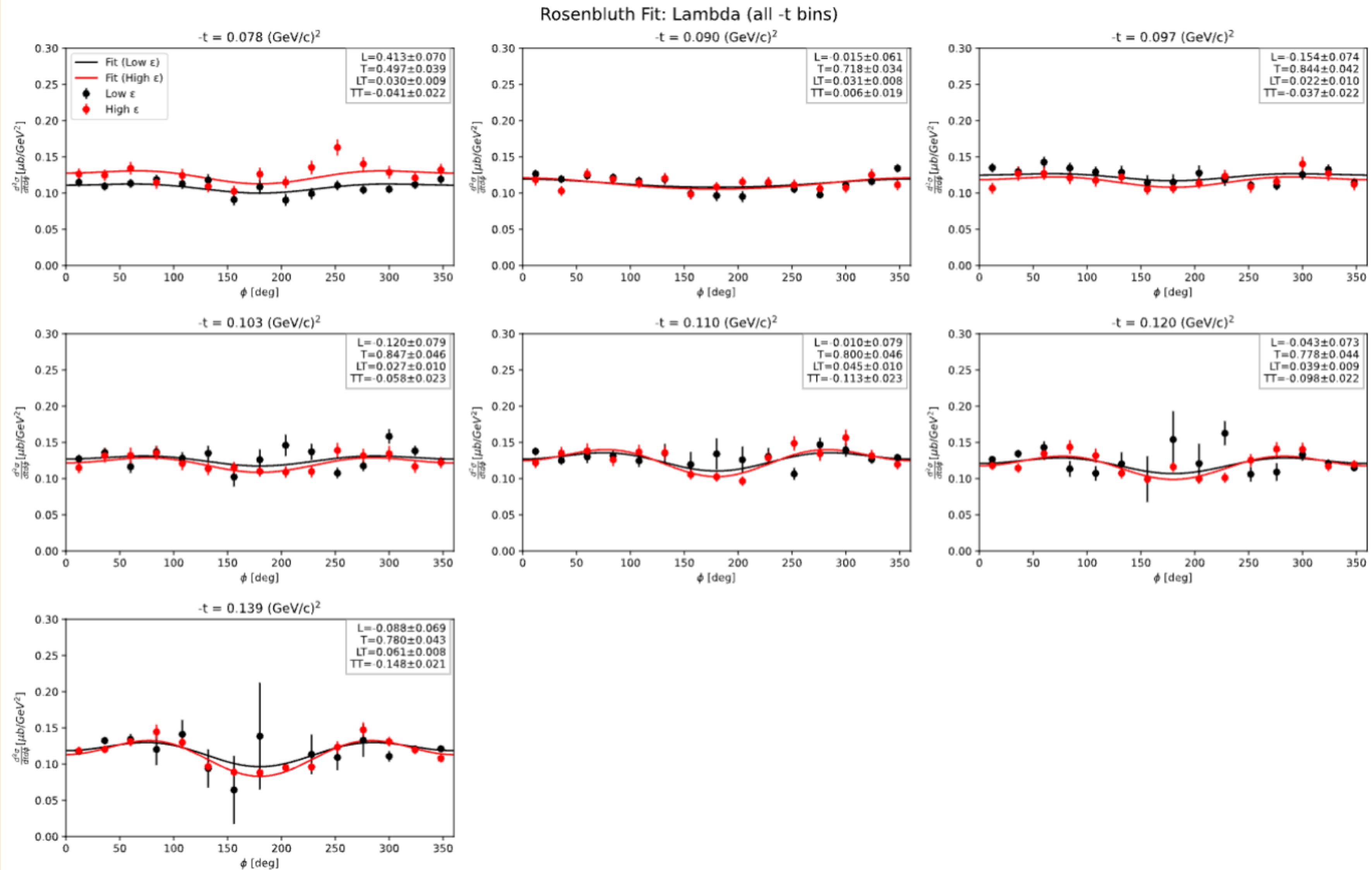


Iteration 01

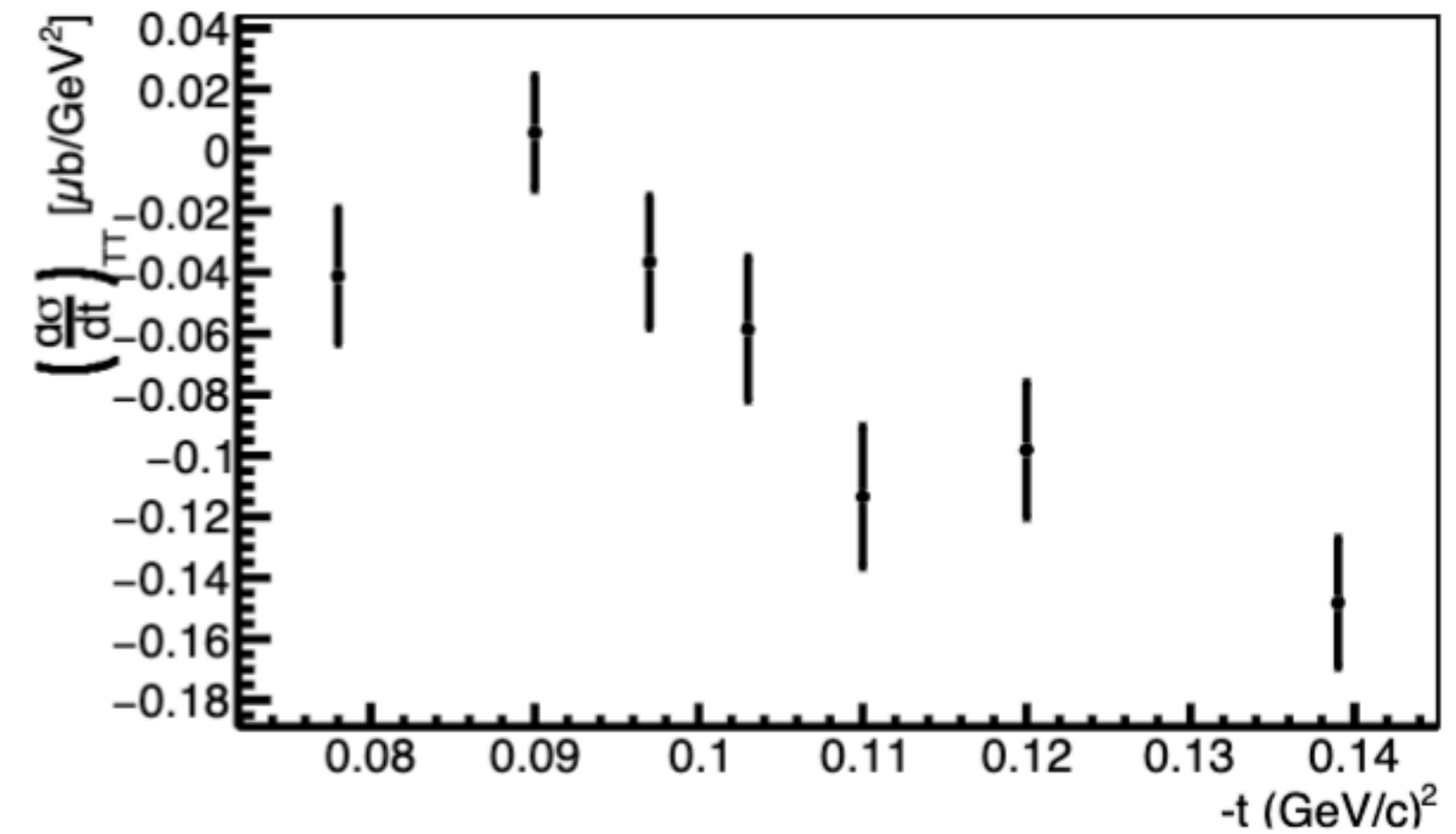
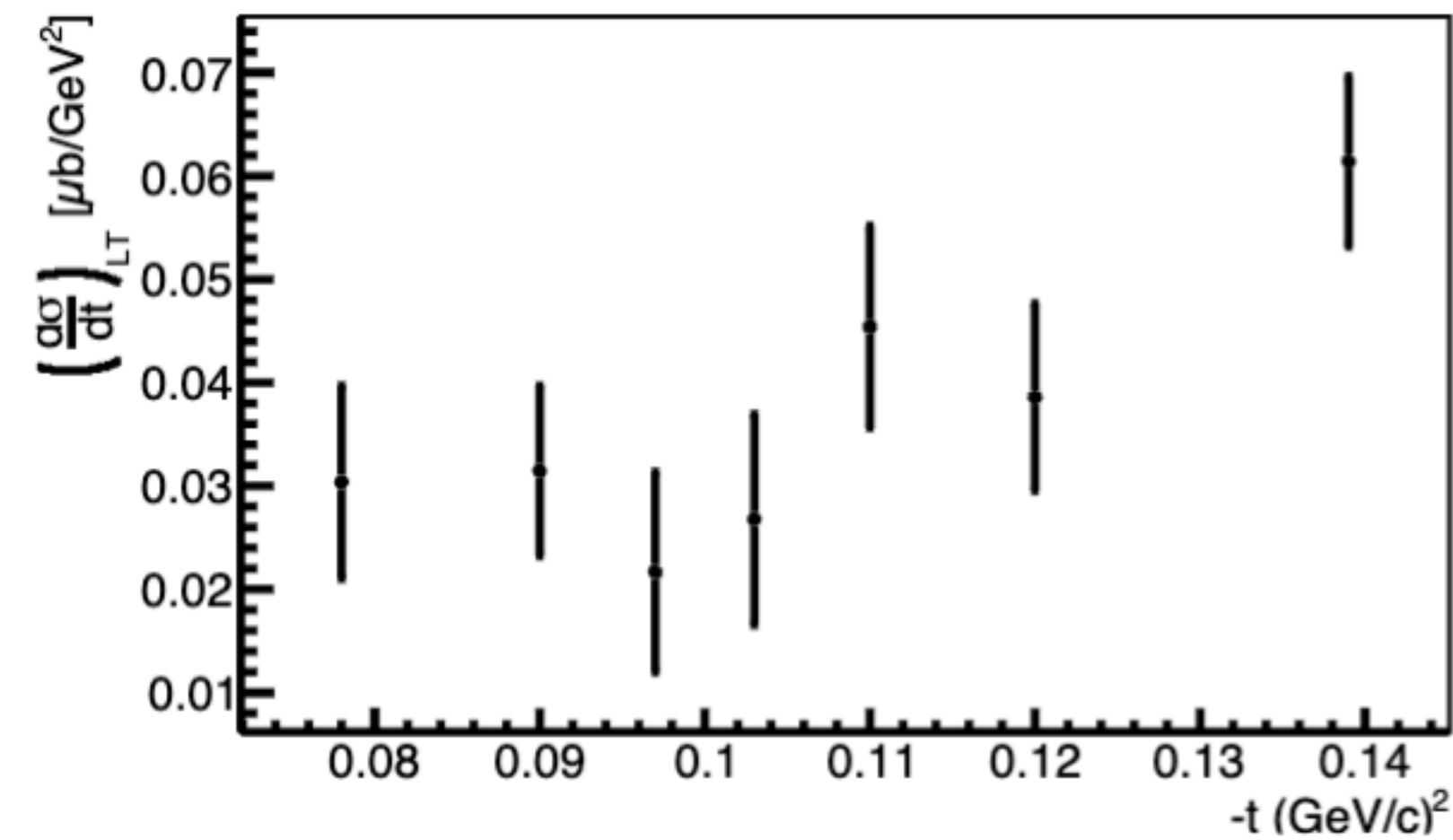
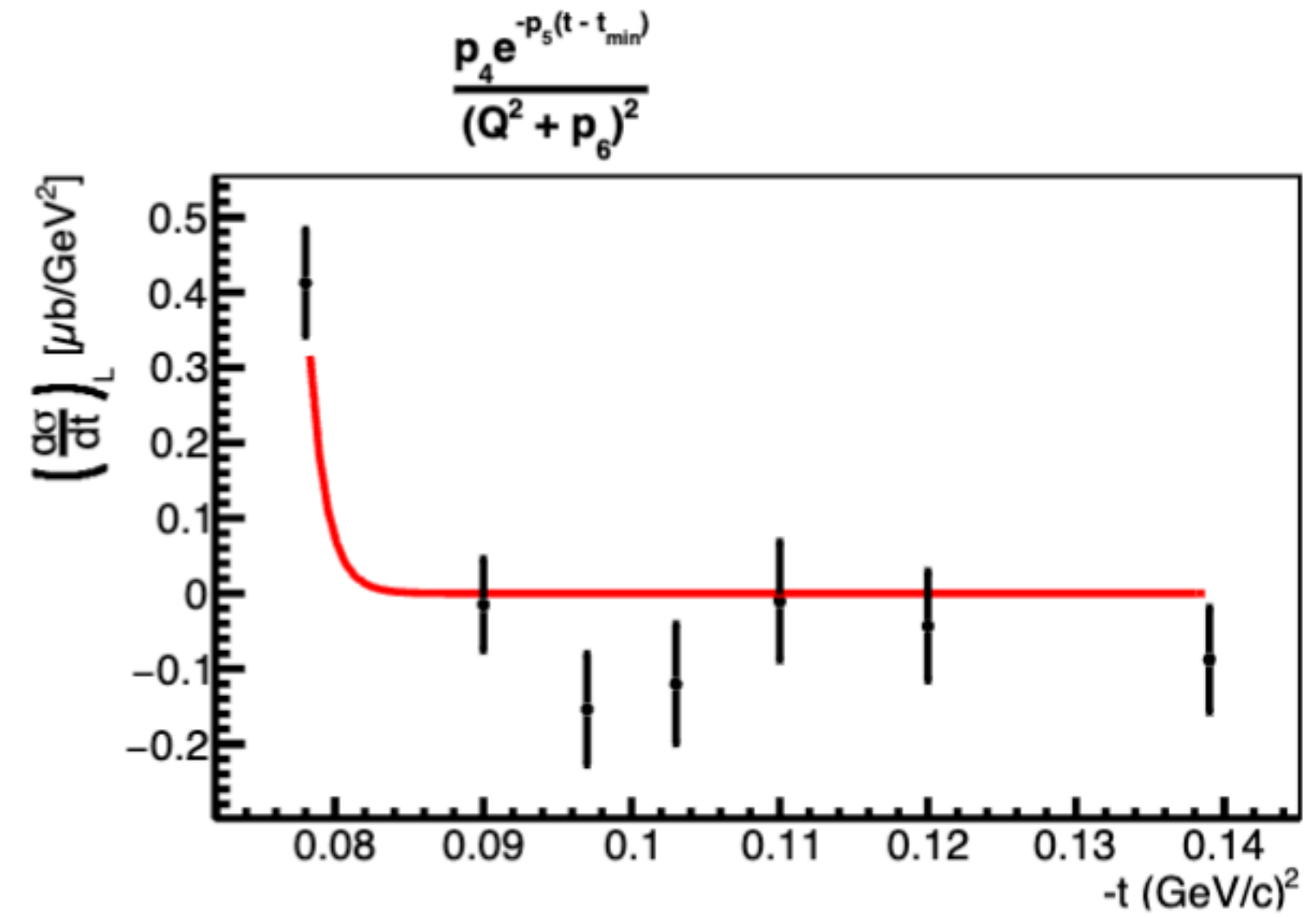
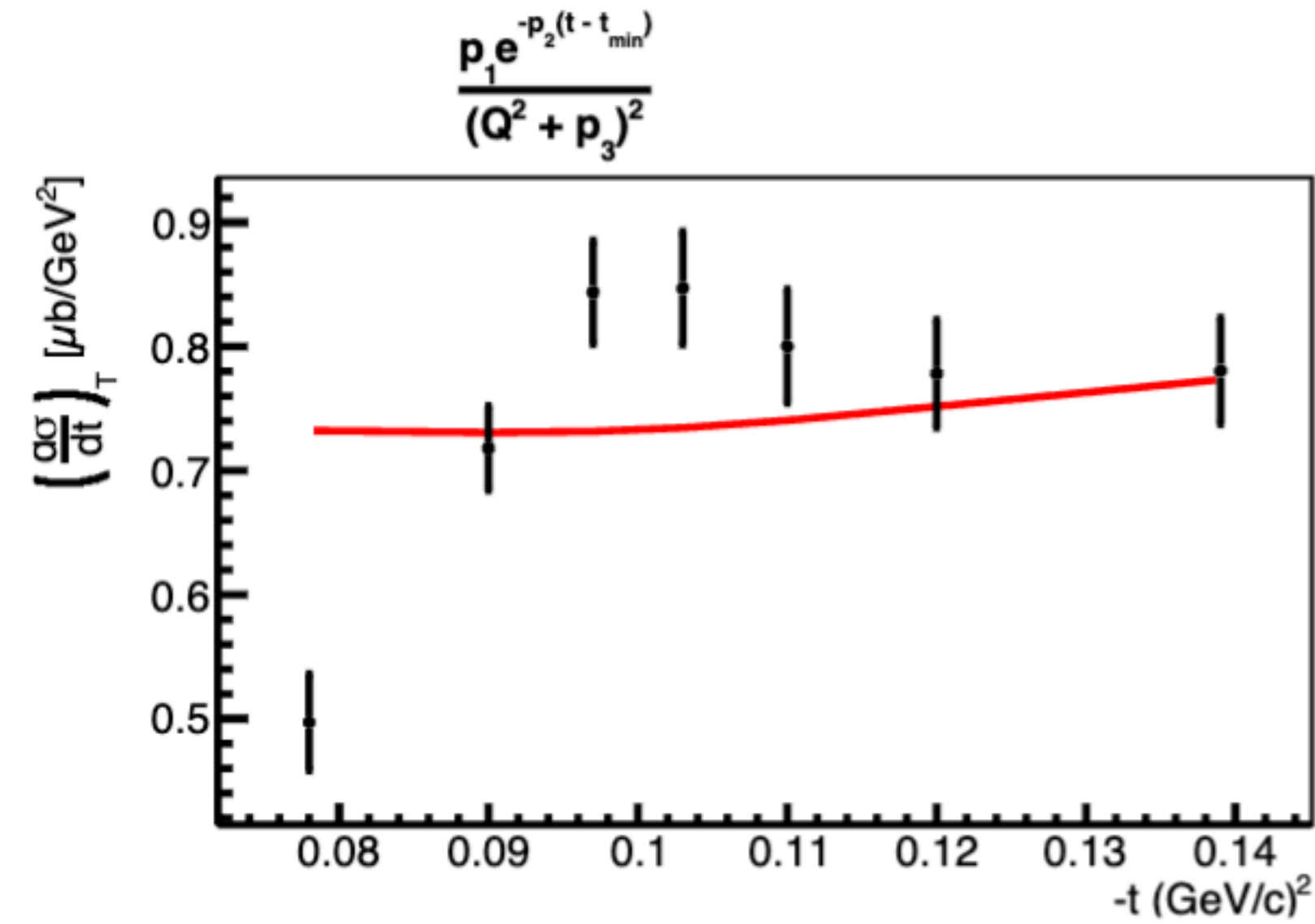




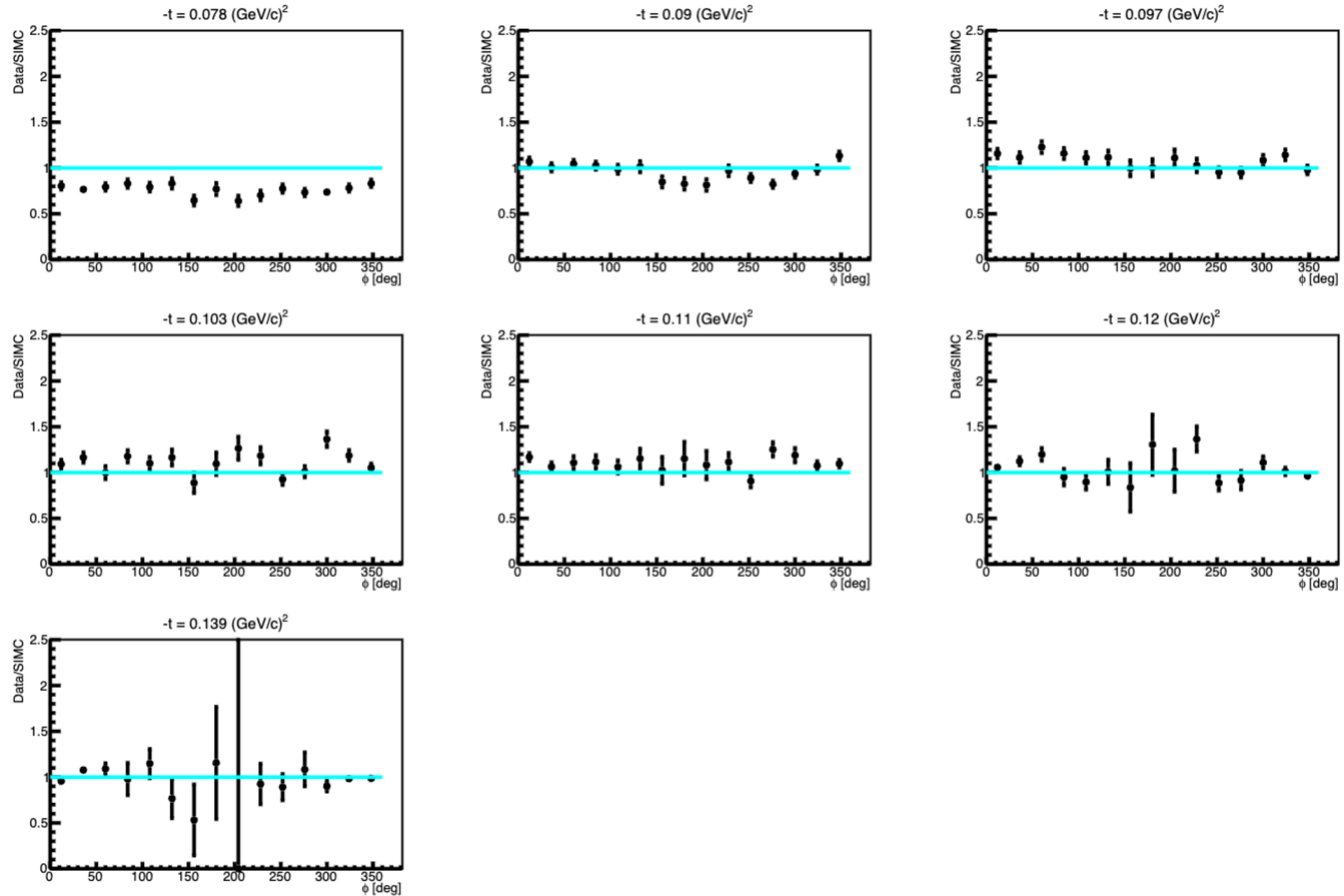
Low & High ϵ Simultaneous Fit (Rosenbluth)

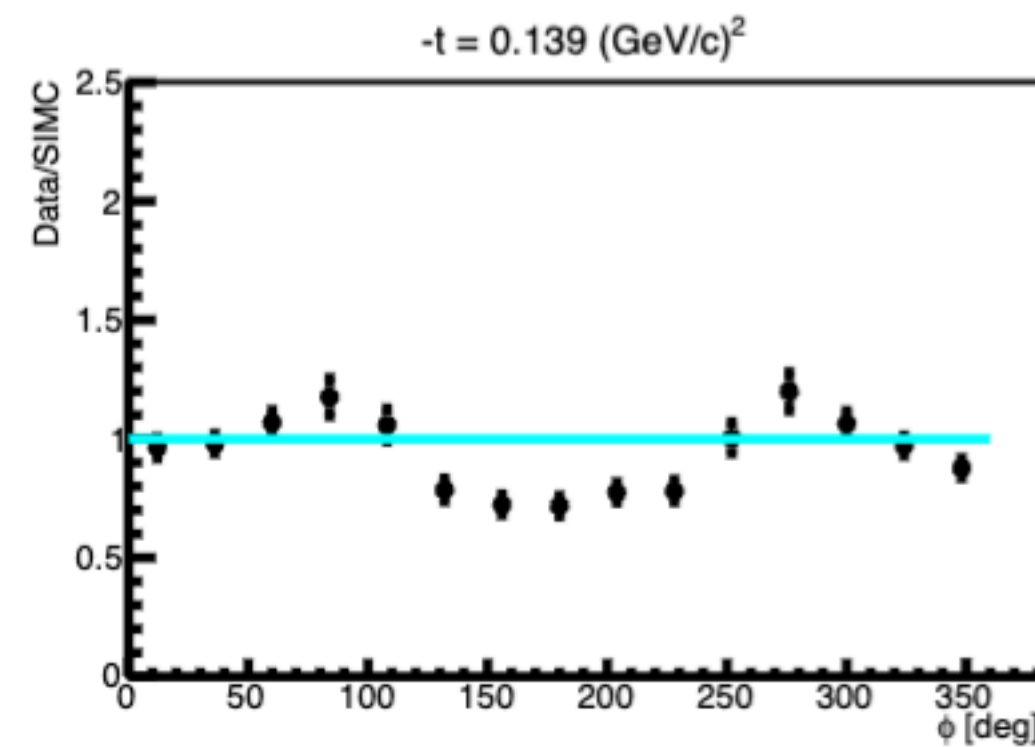
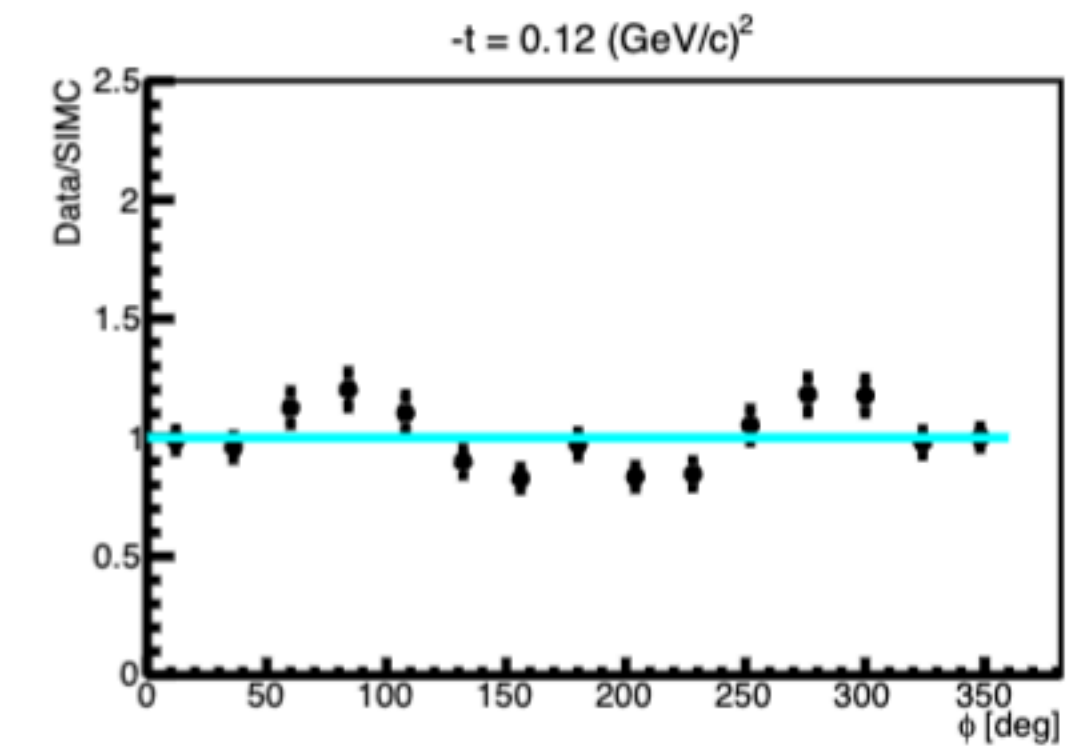
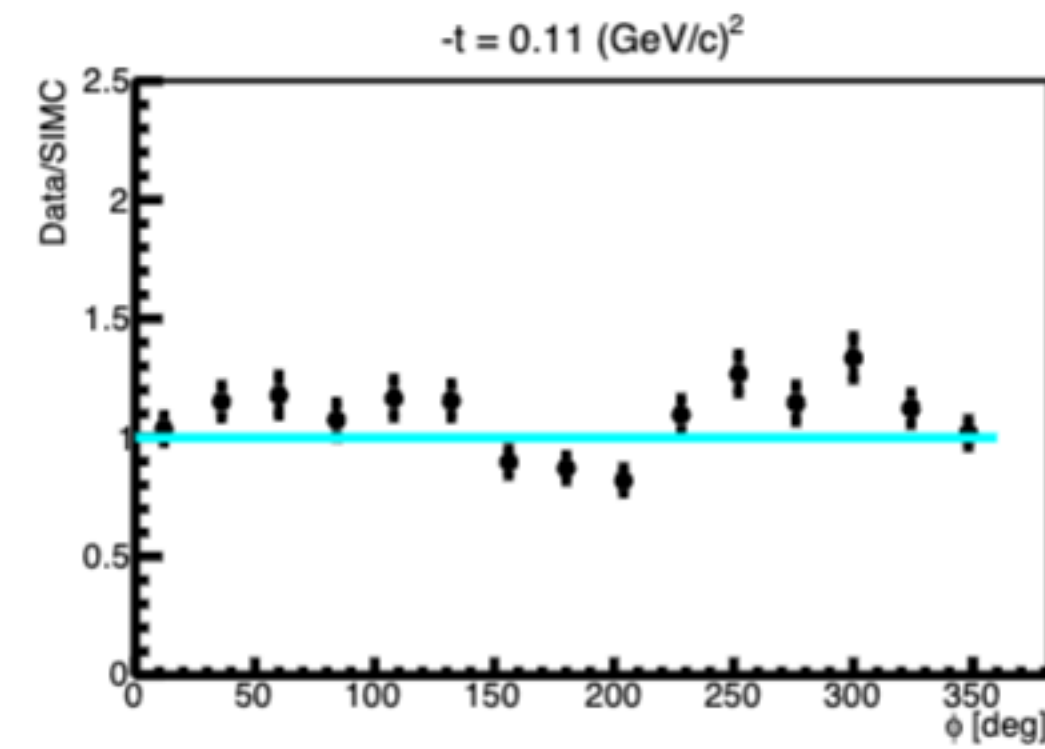
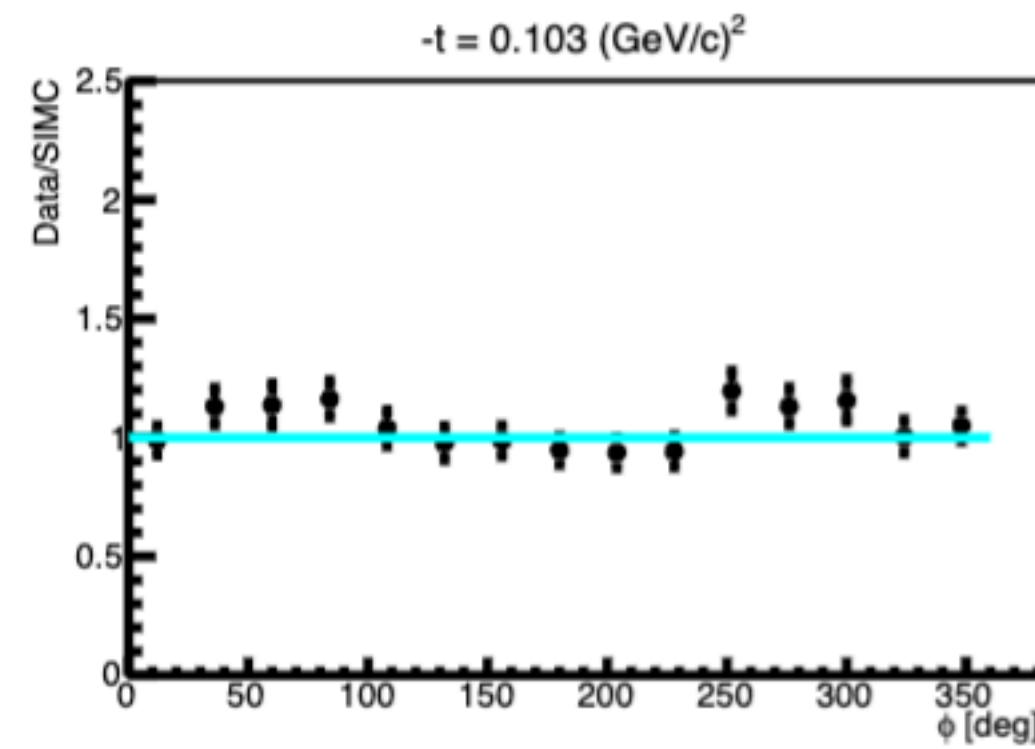
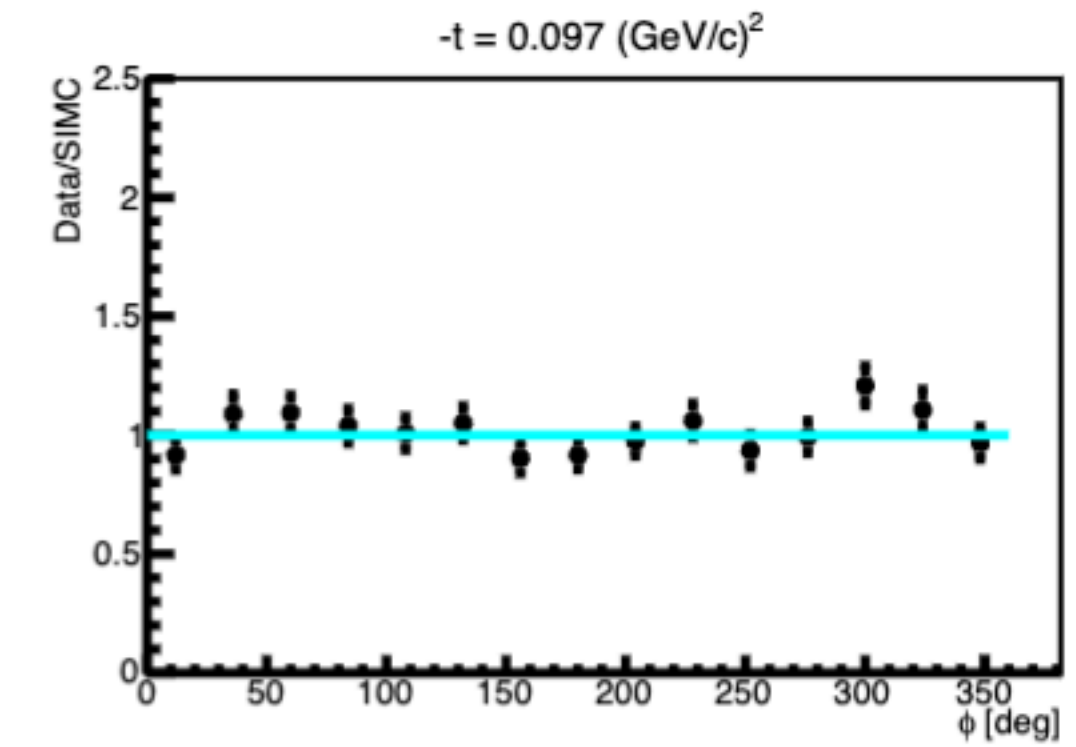
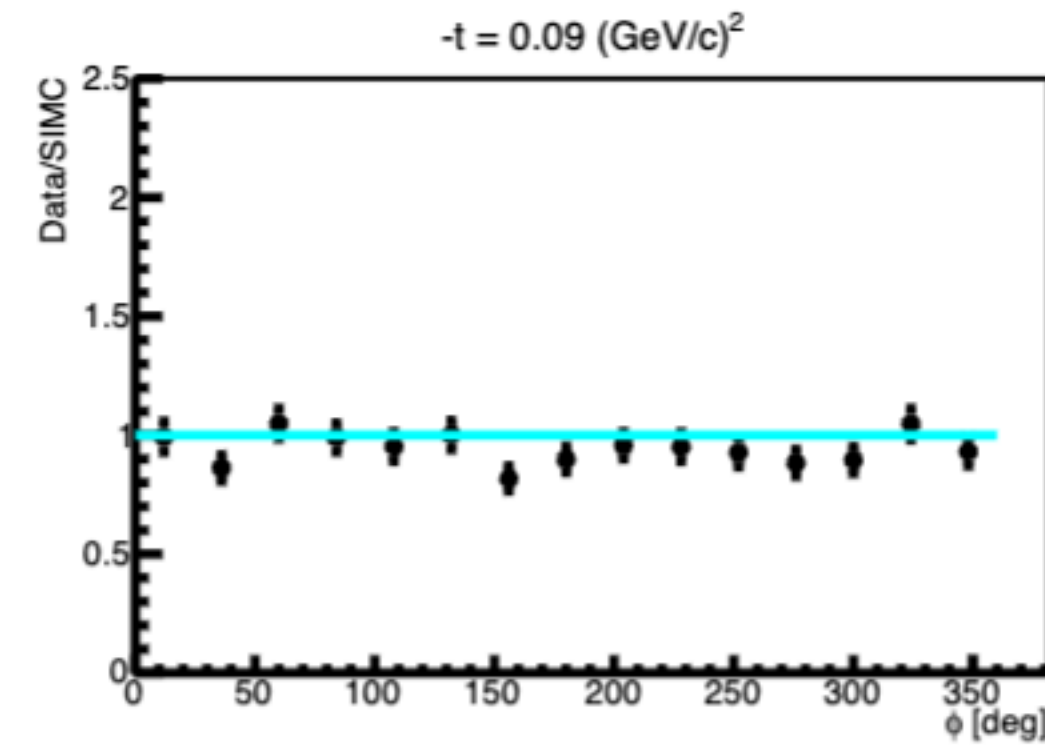
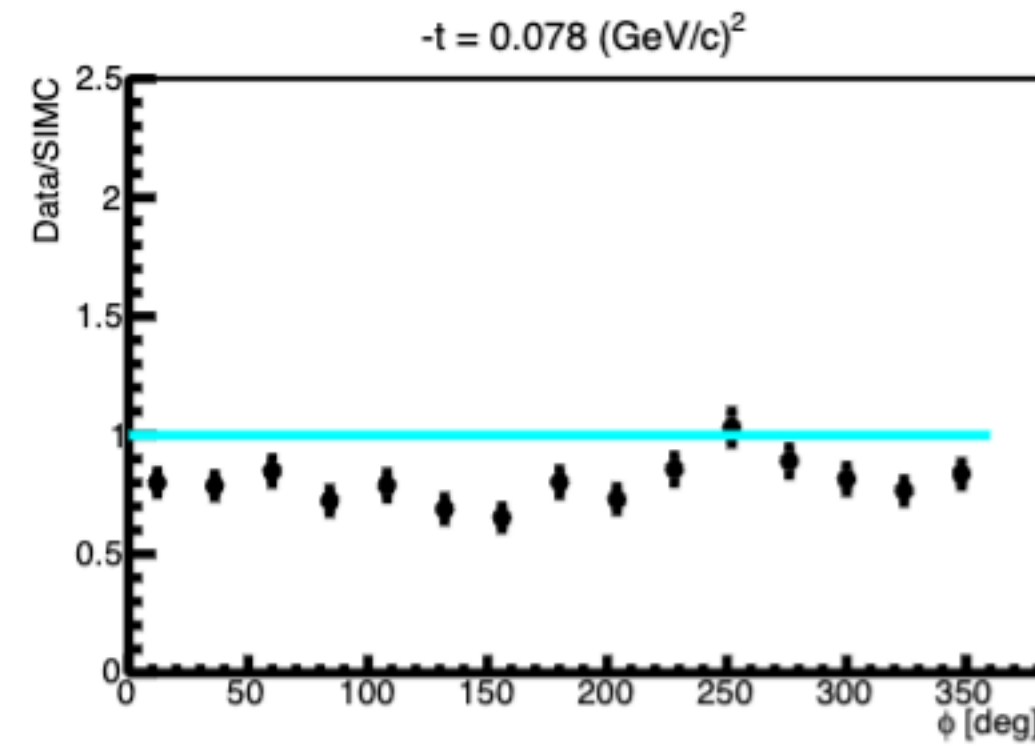


L, T, LT, TT Cross Sections

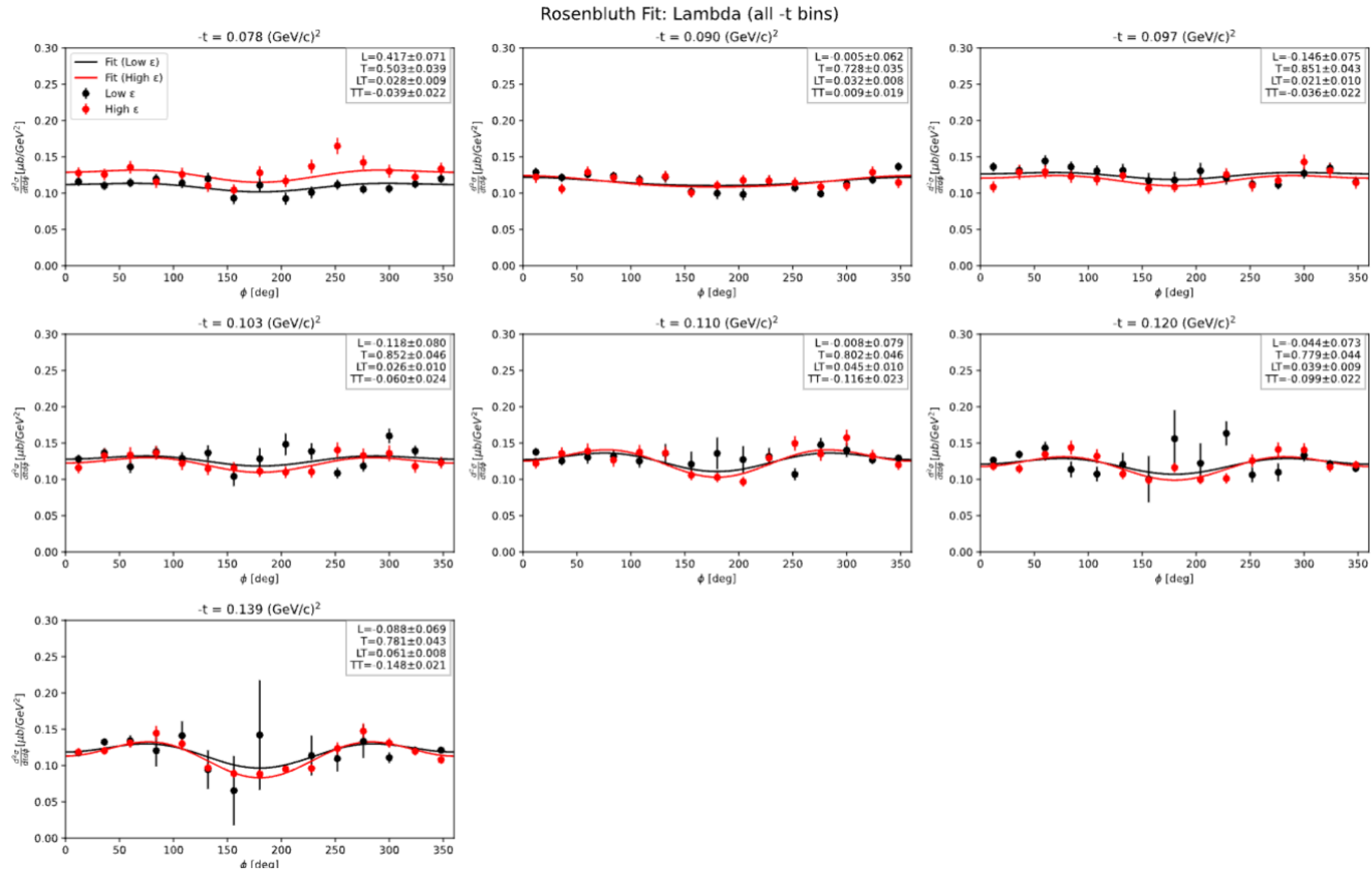


Iteration 02

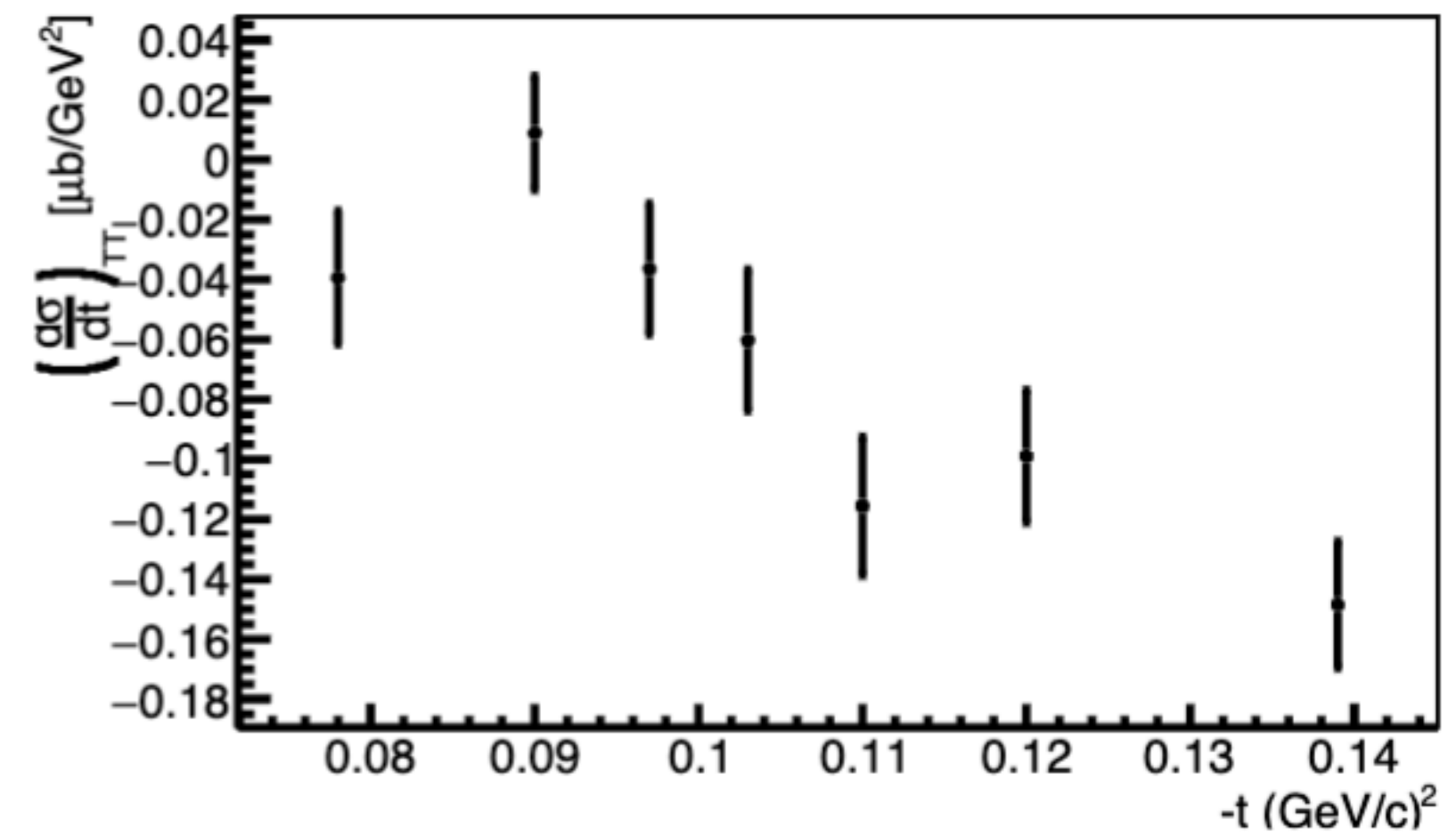
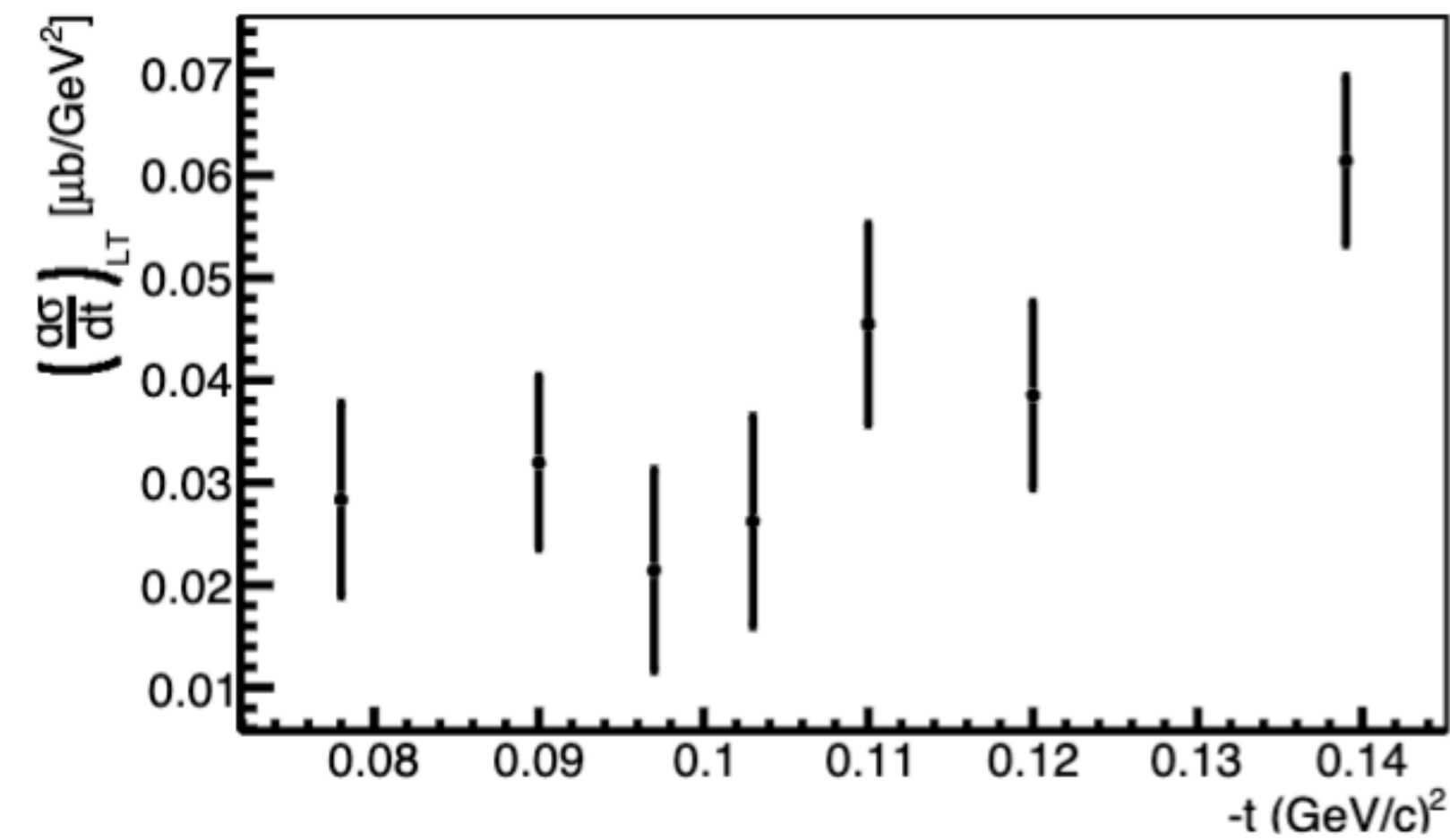
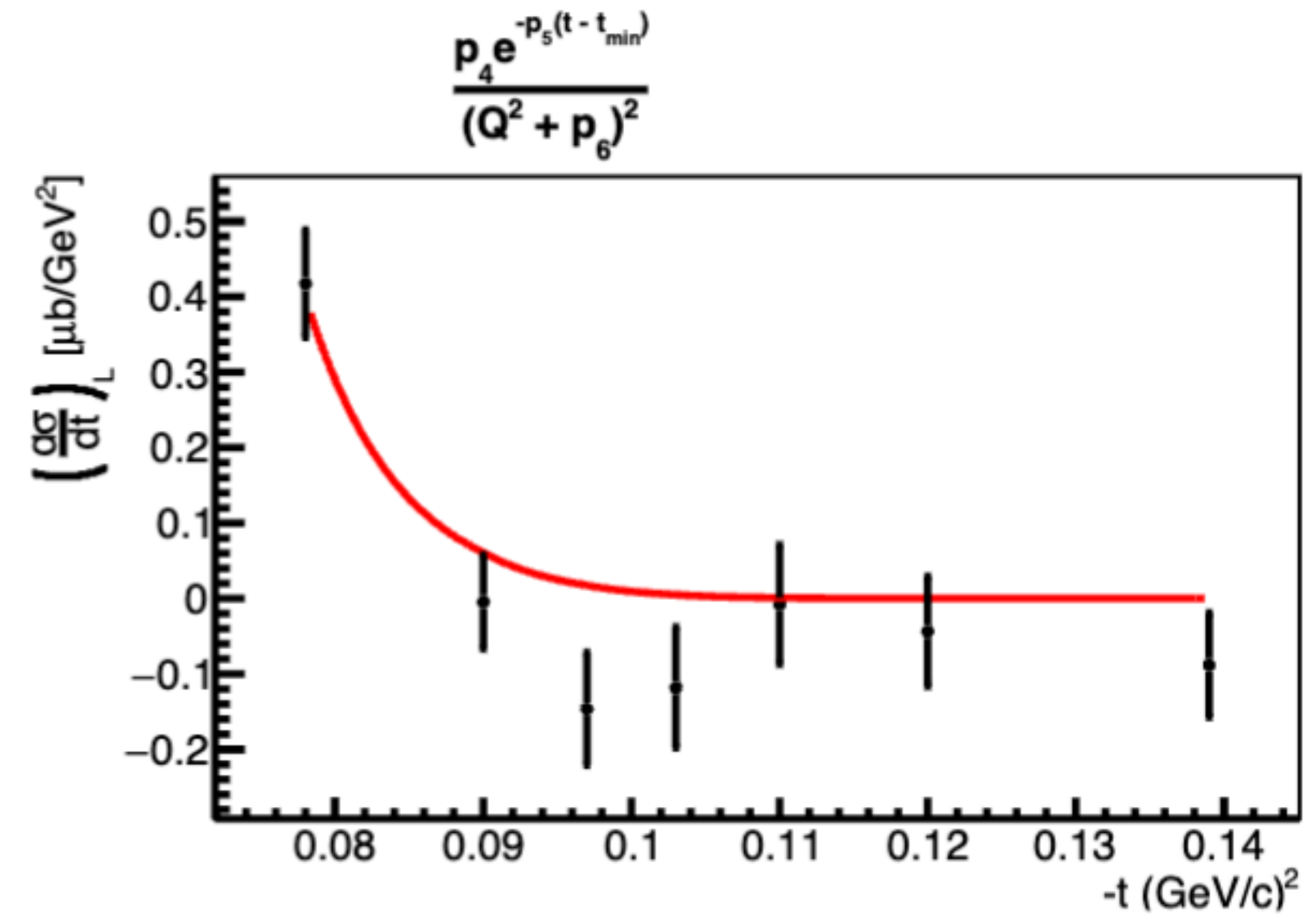
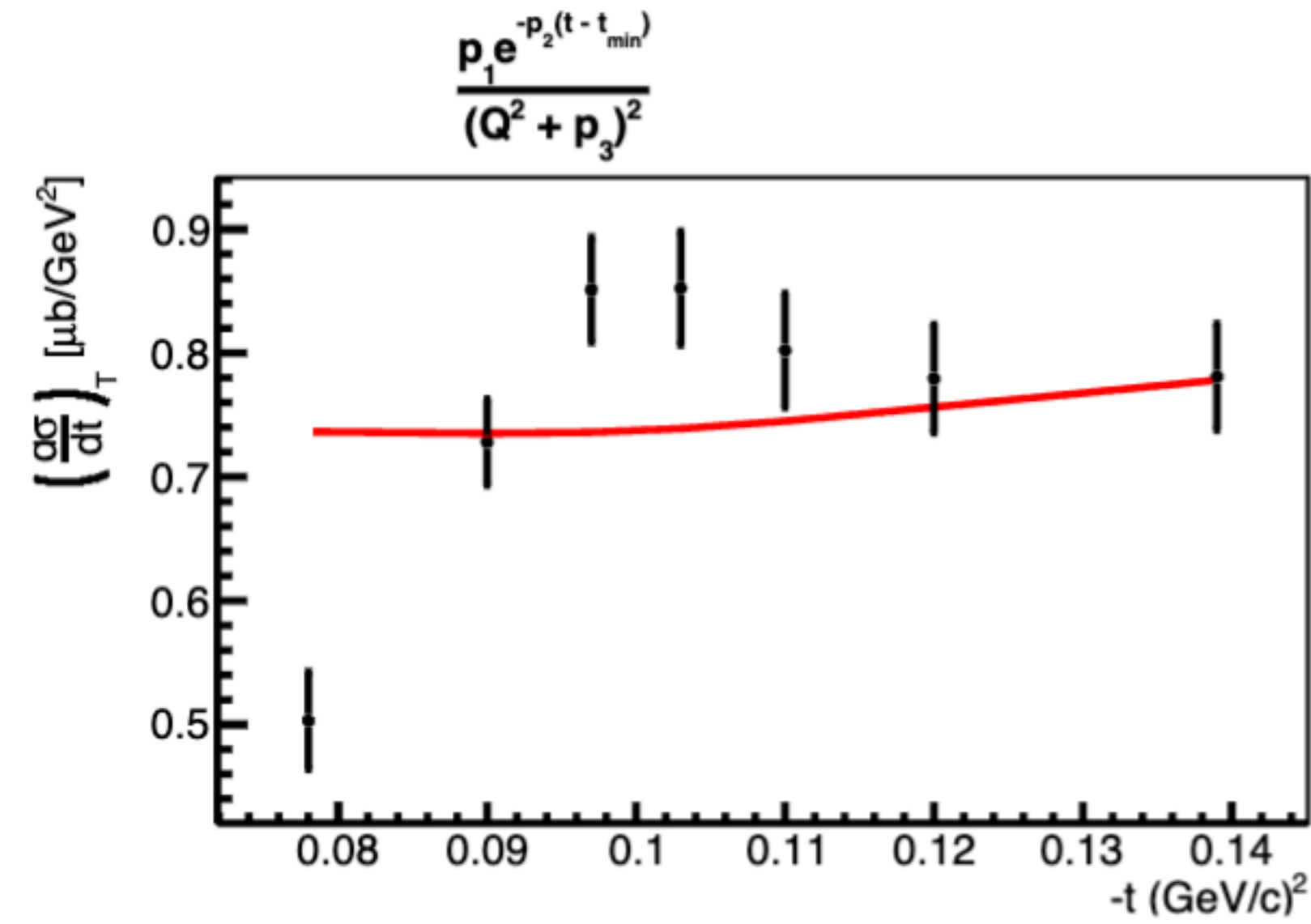




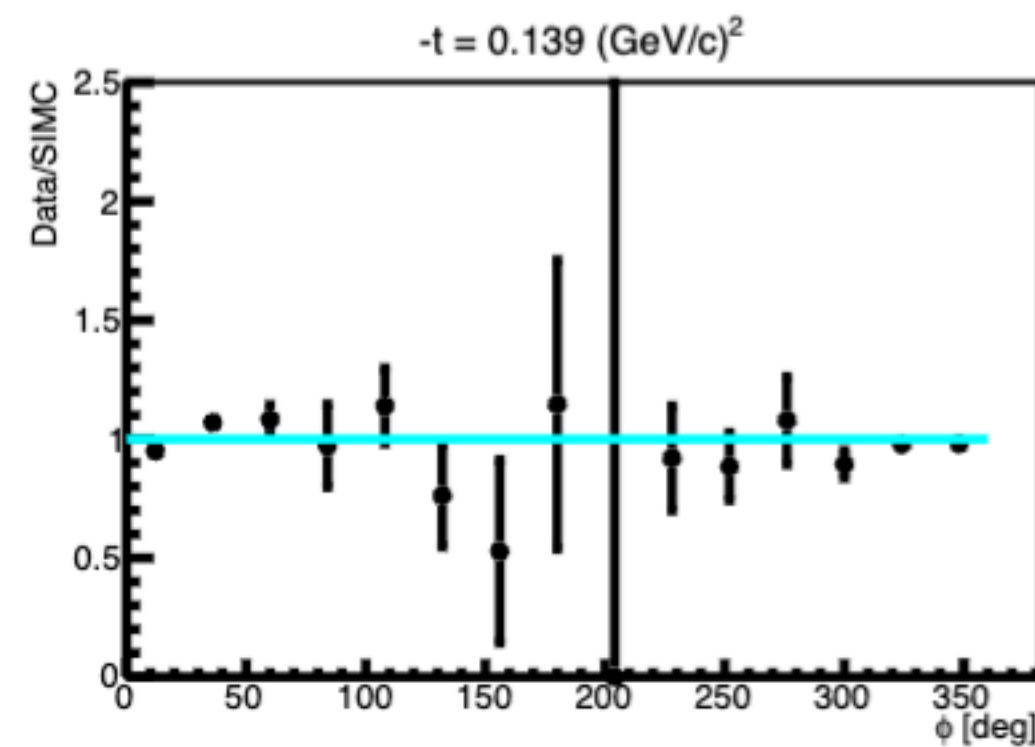
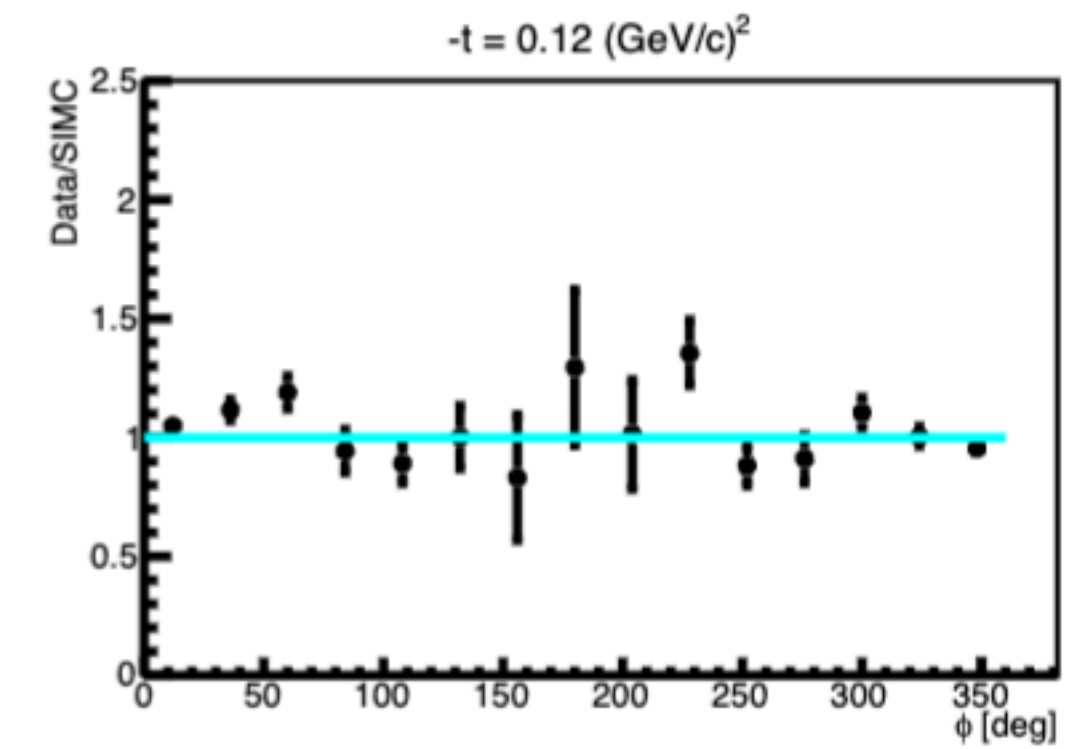
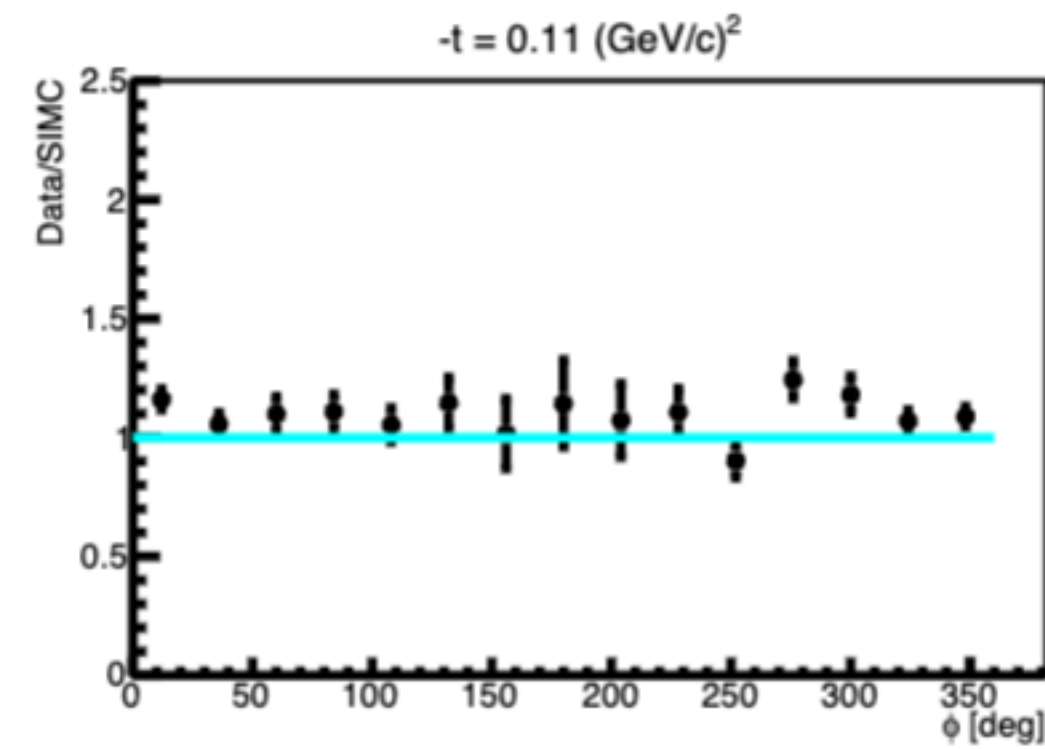
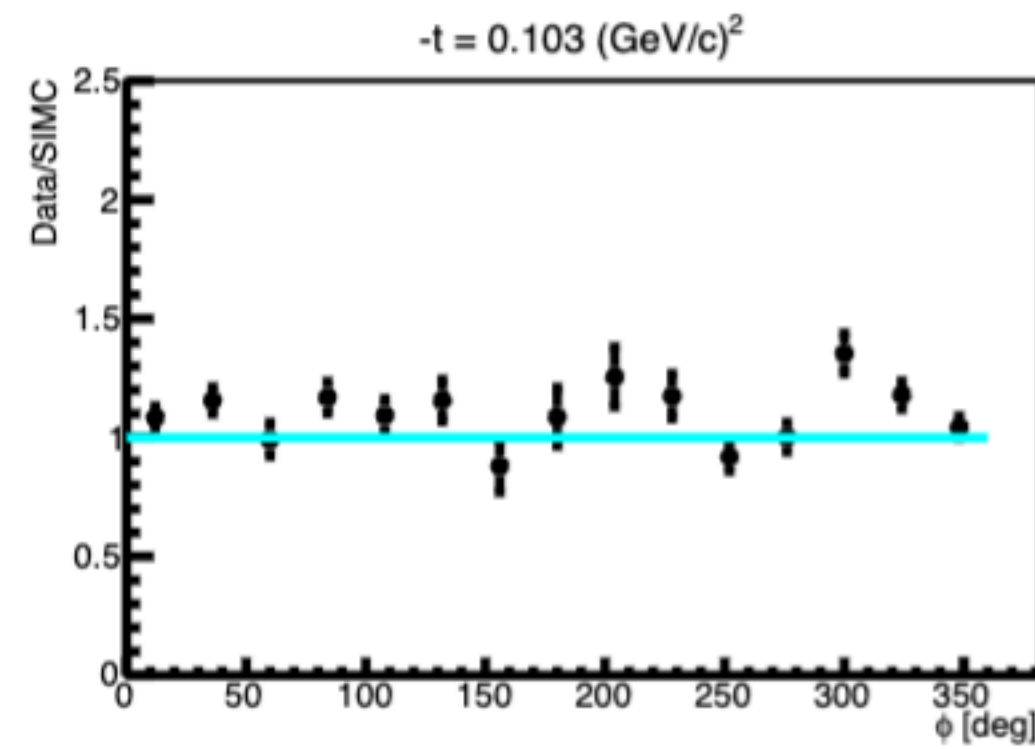
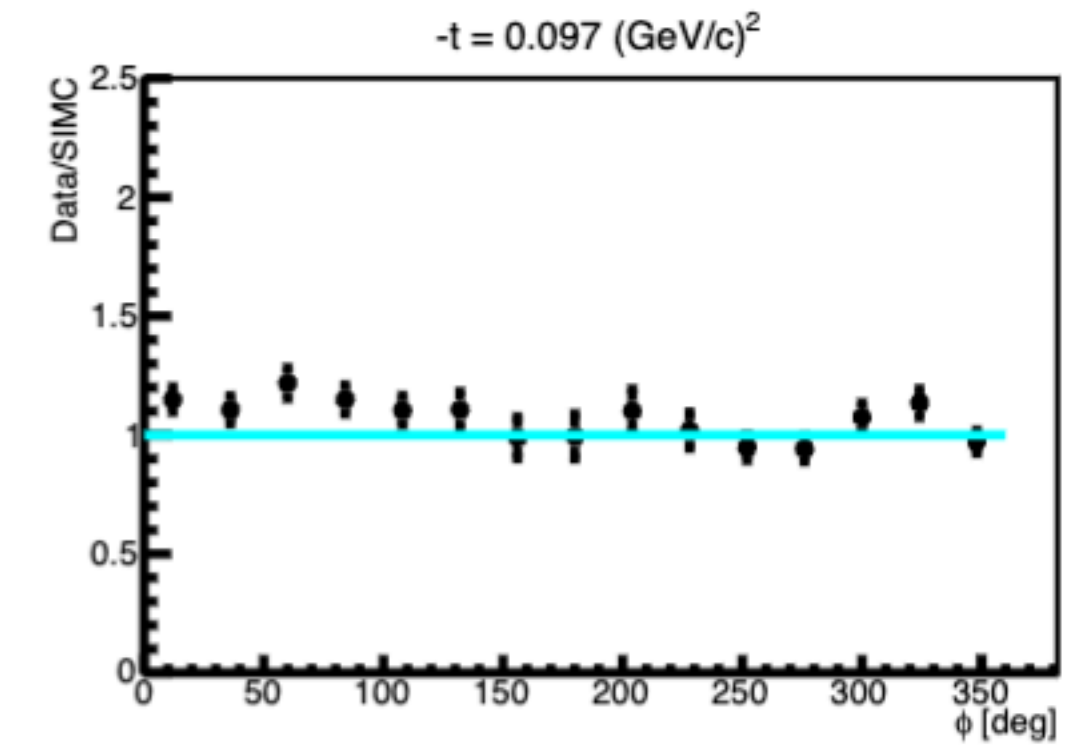
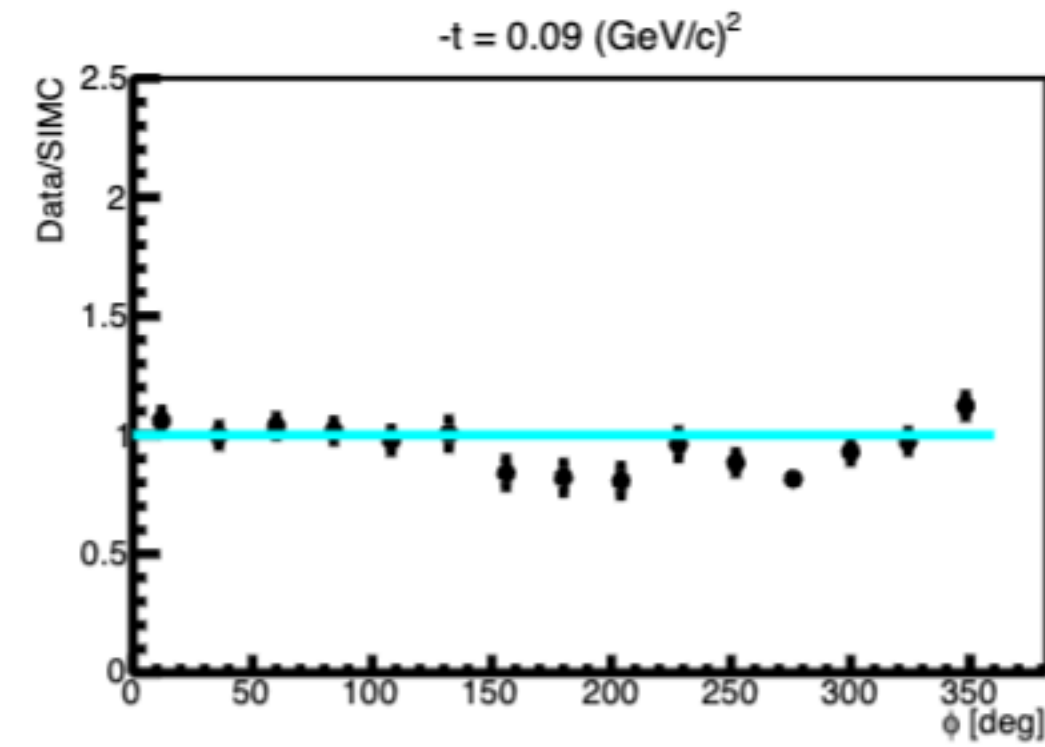
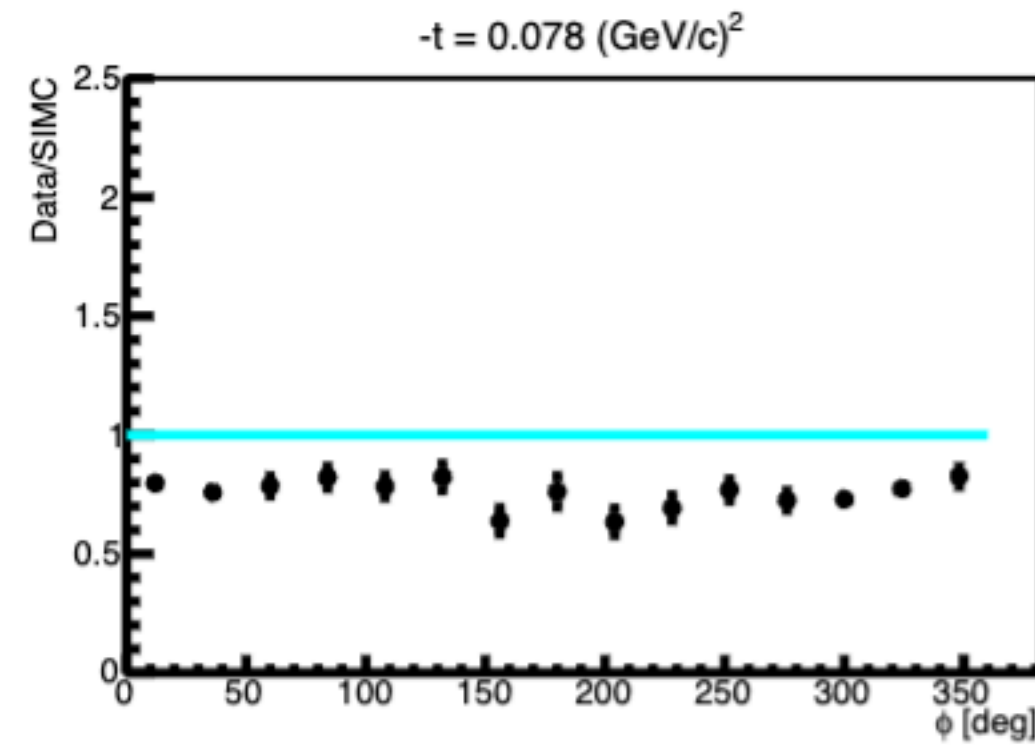
Low & High ϵ Simultaneous Fit (Rosenbluth)

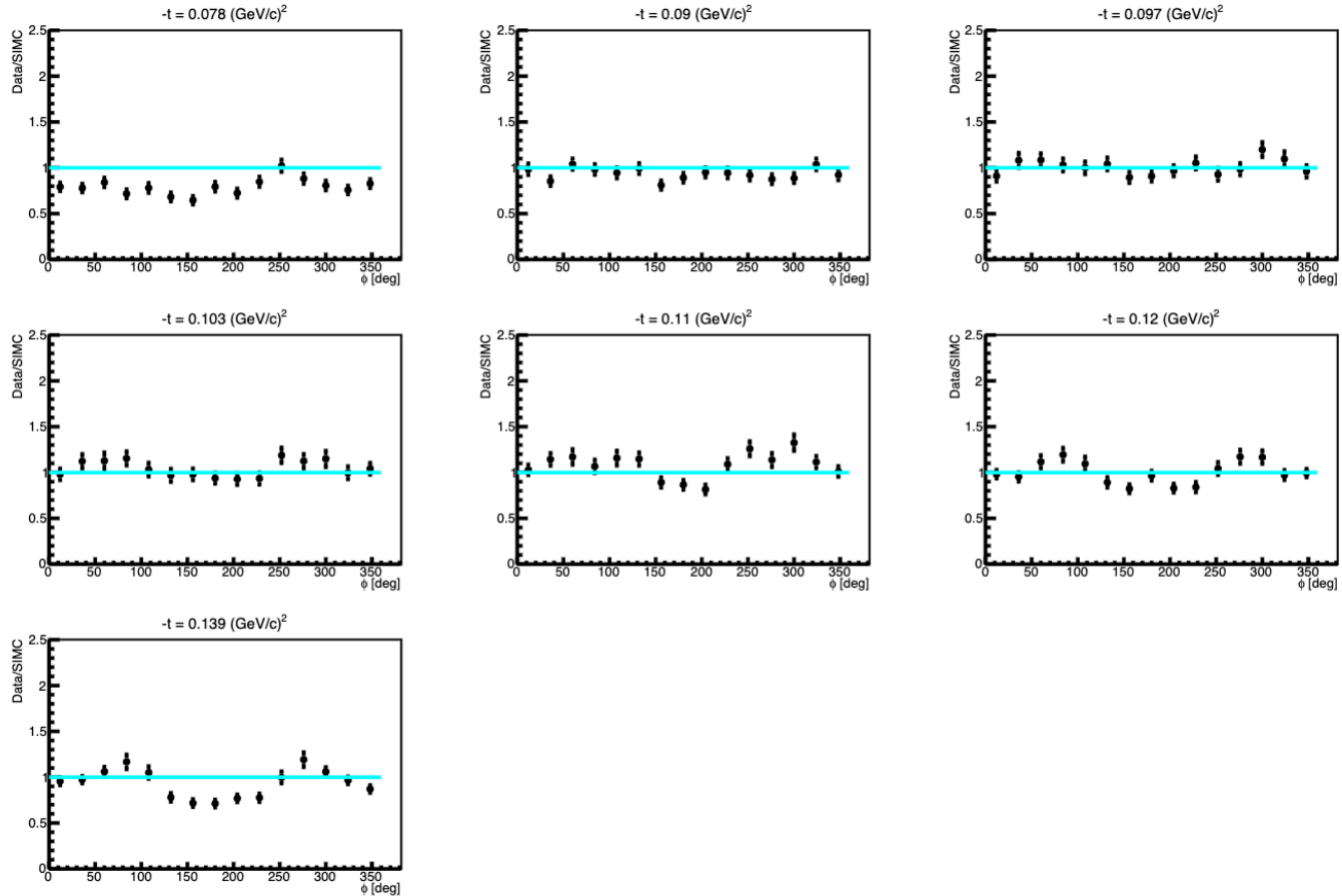


L, T, LT, TT Cross Sections

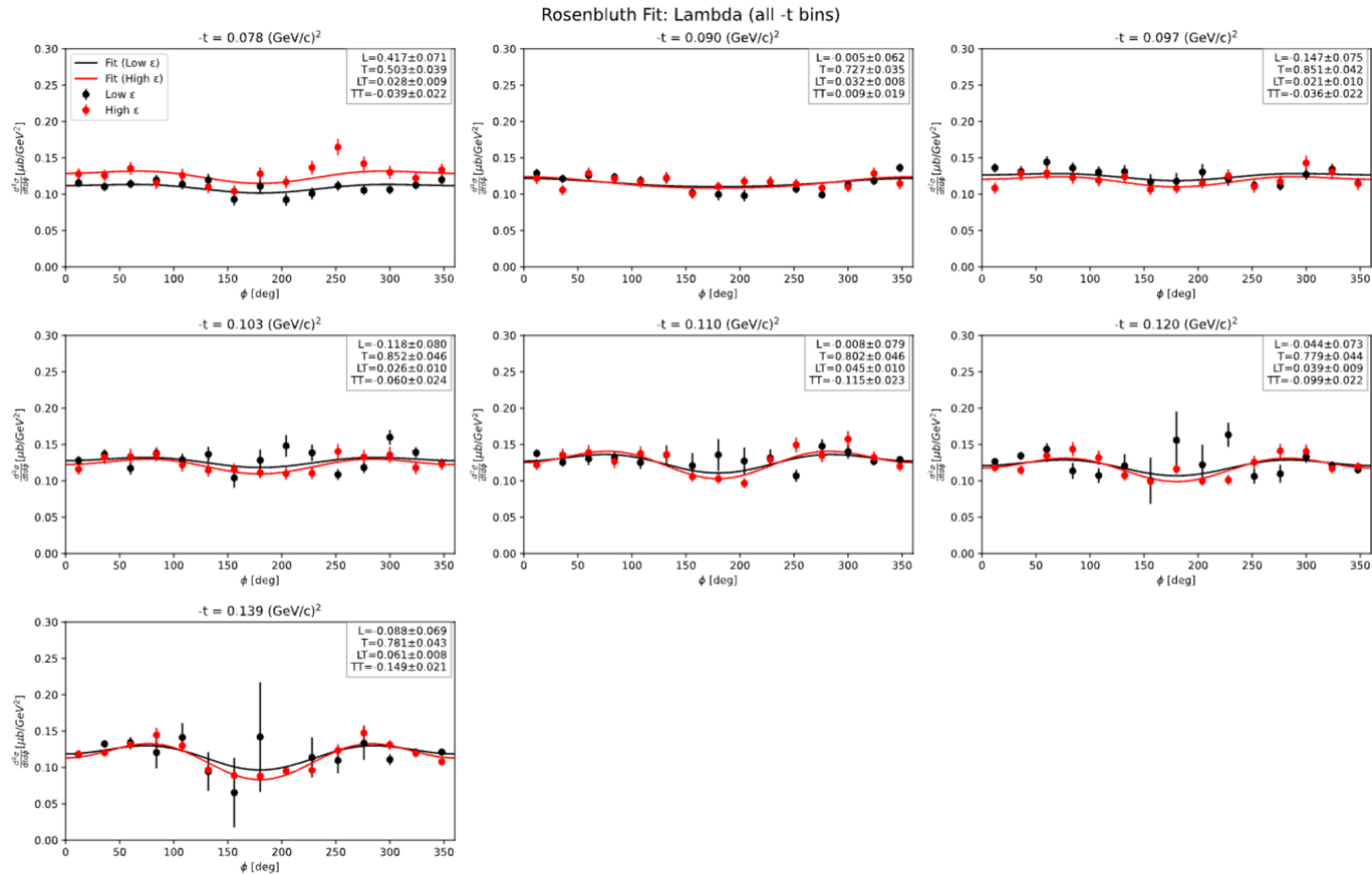


Iteration 03

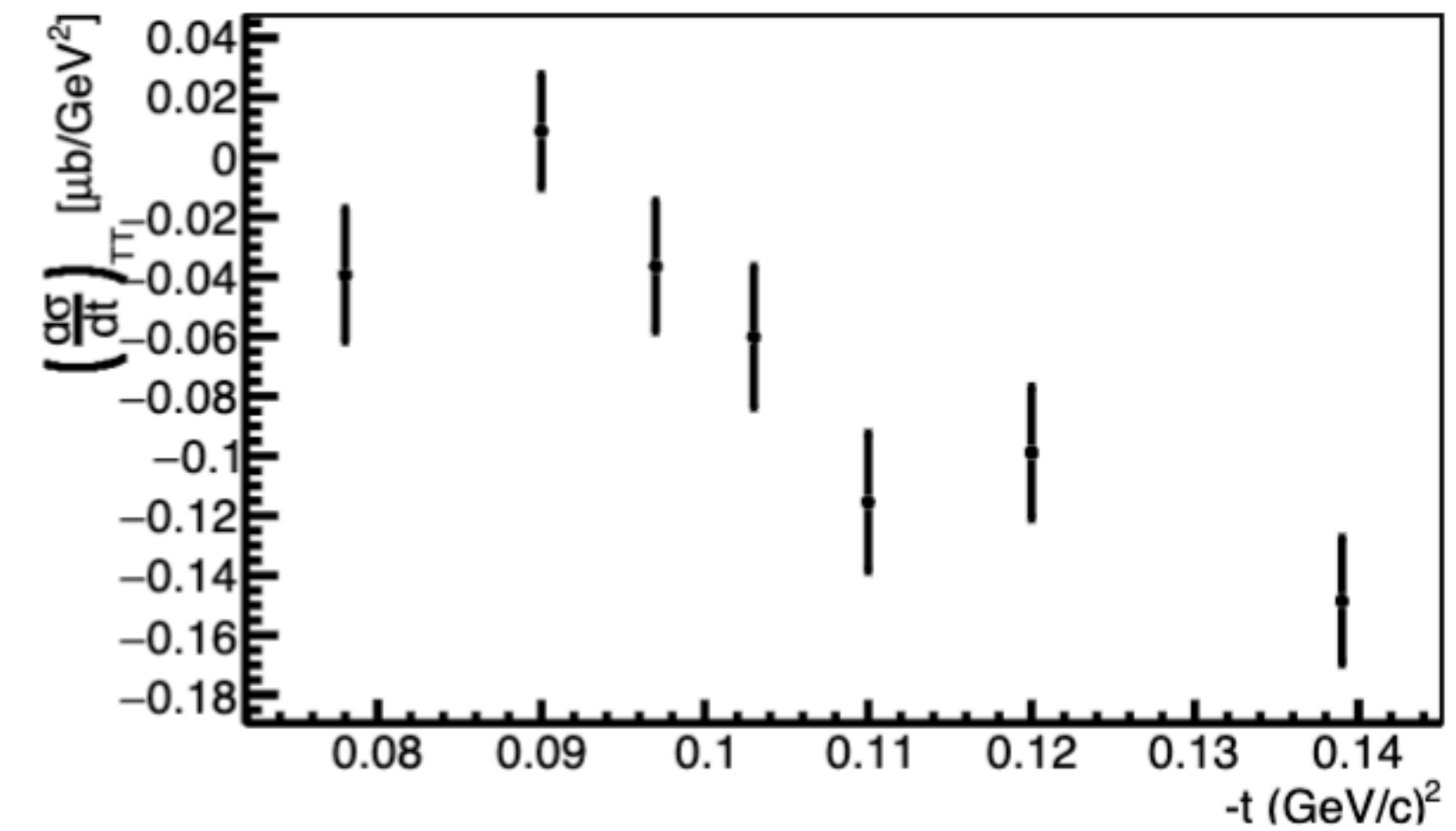
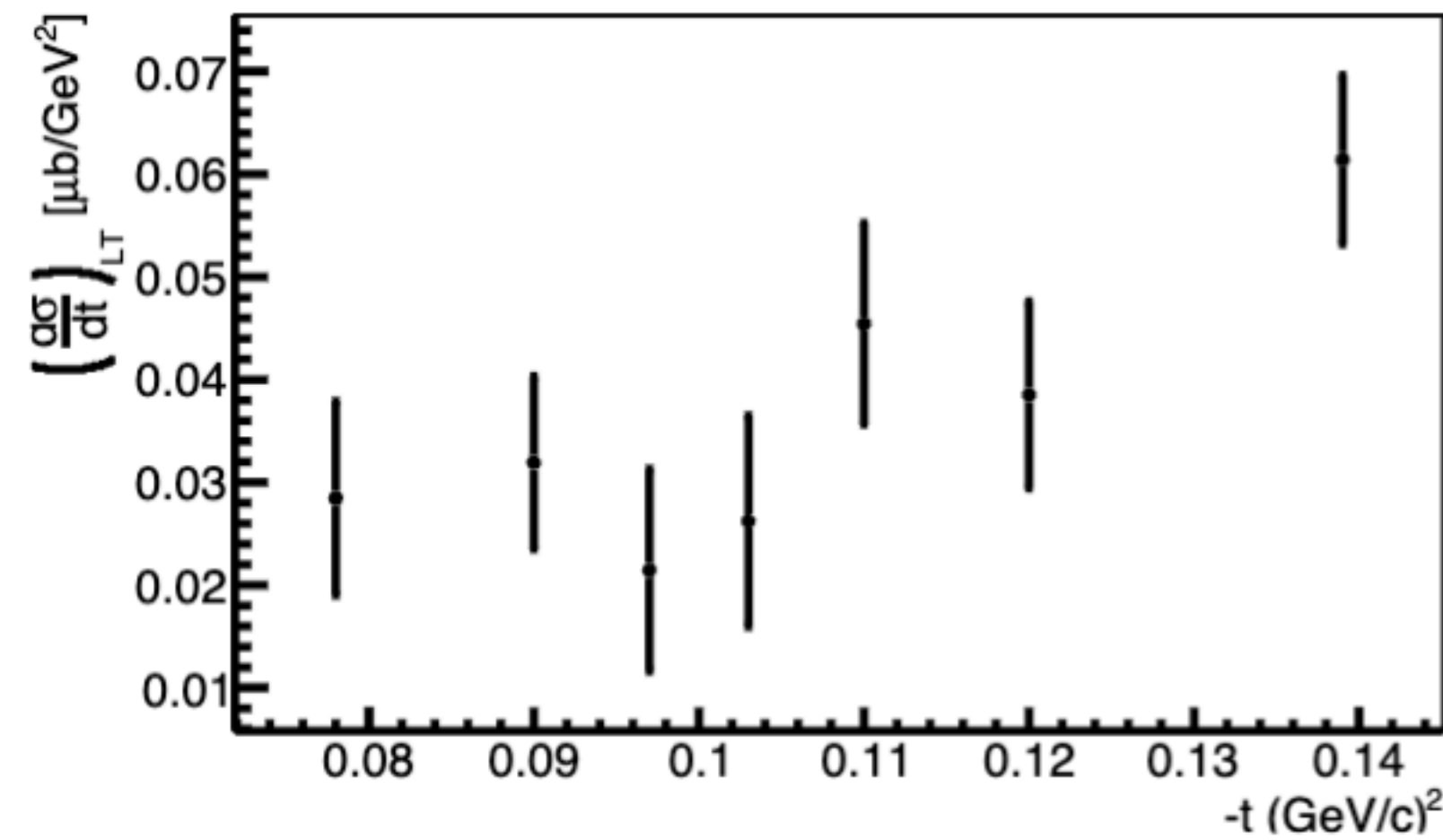
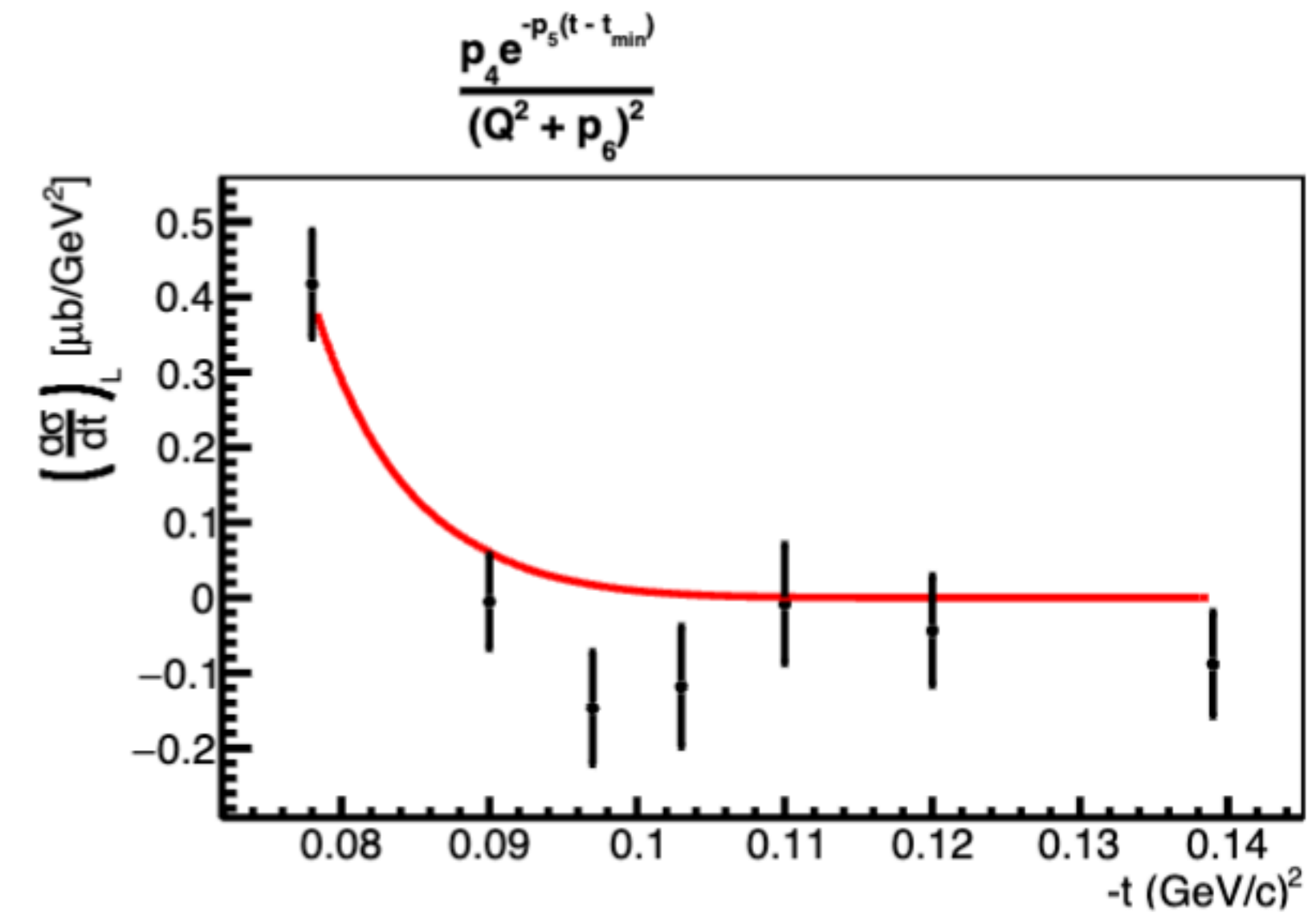
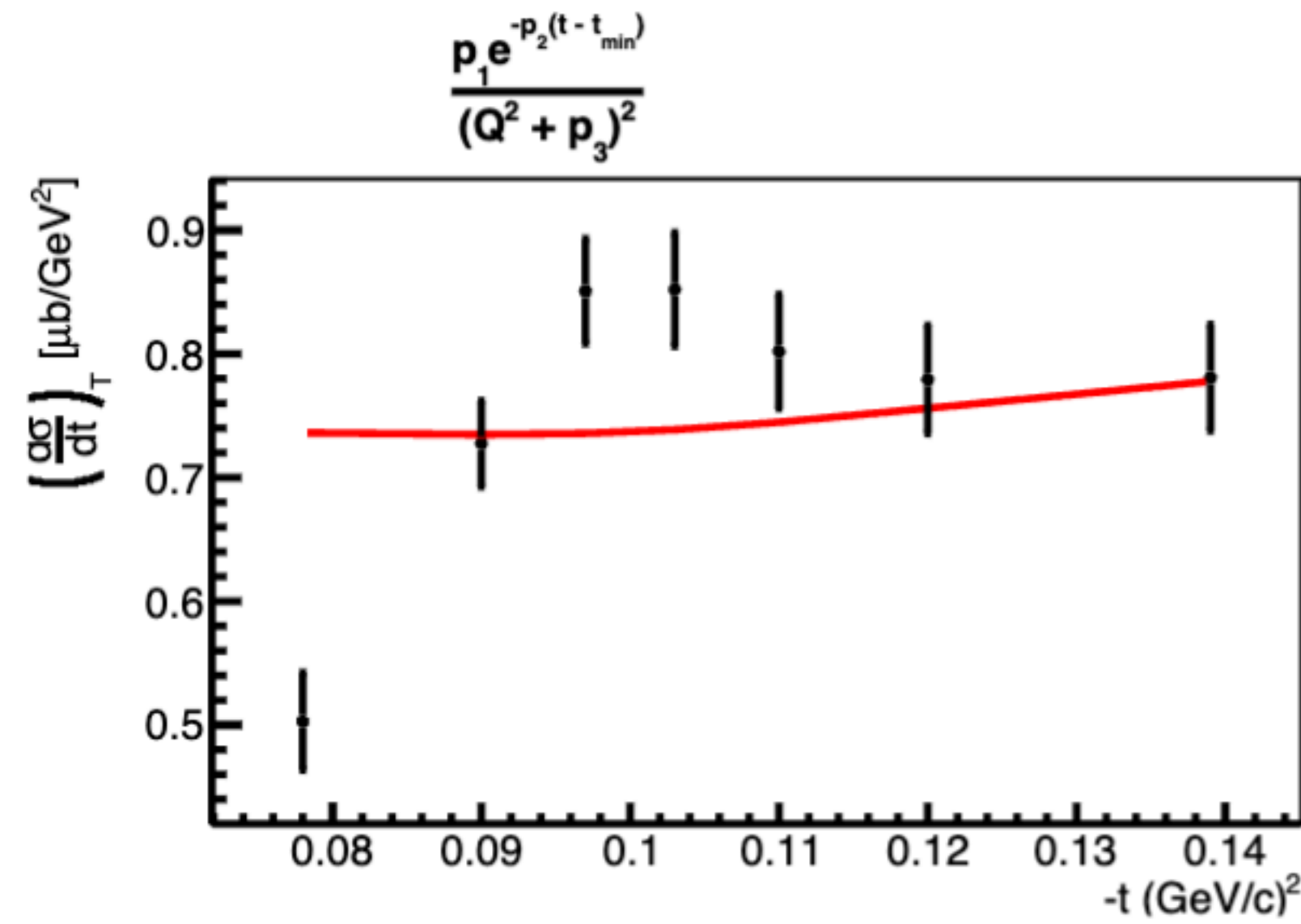




Low & High ϵ Simultaneous Fit (Rosenbluth)



L, T, LT, TT Cross Sections



Iteration 04

