

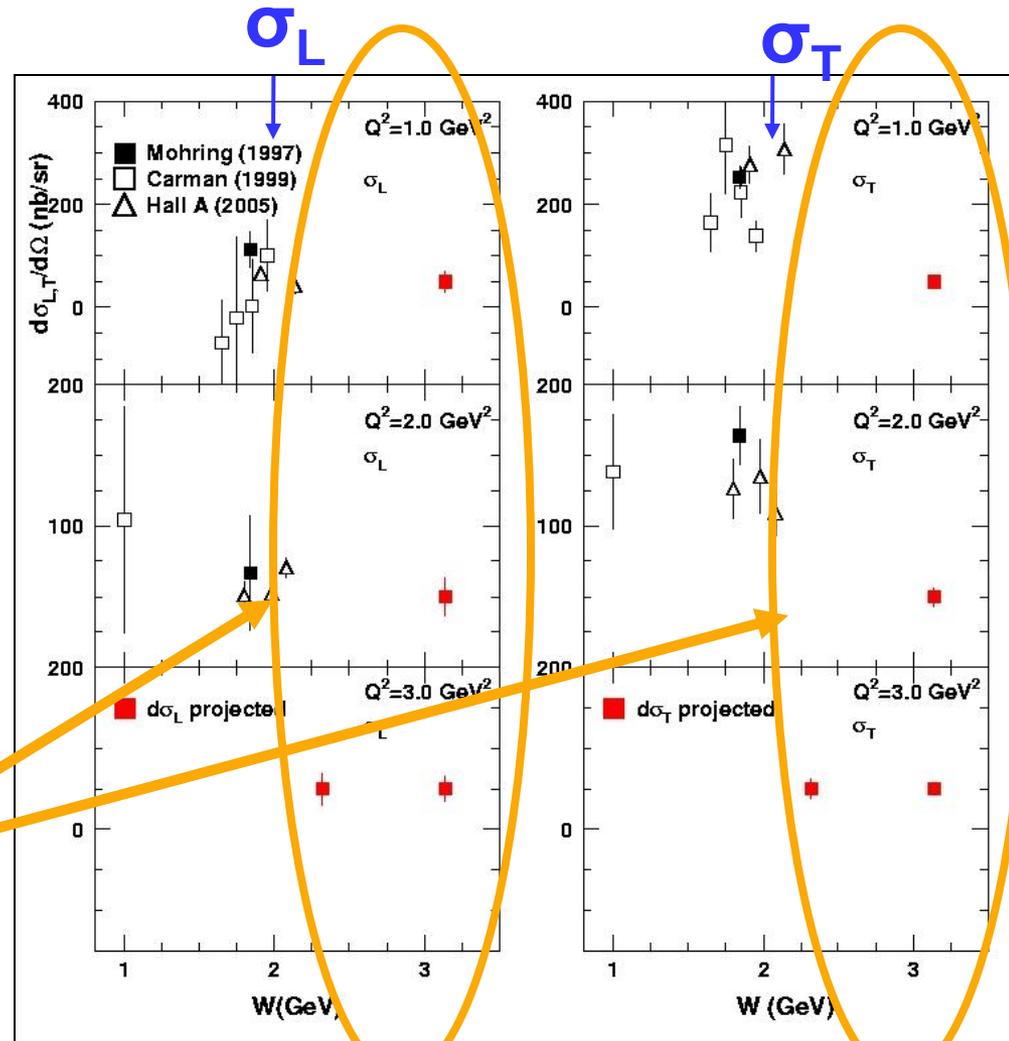
E12-09-011: L-T Separated Kaon production Cross Sections from 5-11 GeV

- Measure the separated cross section of K^+ production above the resonance region
 - Separated cross sections: L, T, LT, TT over a wide range of Q^2 , t-dependence
- The Q^2 dependence will allow studying the scaling behavior of the separated cross sections
 - TAC34: “... [together with π^+ data] the proposed measurement would make a substantial contribution towards understanding not only the K^+ production mechanism, but hard exclusive meson production in general”
 - PAC34 report: “this would open a new domain for GPD study since virtually nothing is known concerning these quantities when strangeness is in play” and “comparing the Q^2 variation of the cross section against the prediction of QCD...is a solid physics case which certainly justifies the experiment”
 - TAC38: “the theoretical motivation stands strong....in the meantime a few improvements to address deficiencies in QCD calculations have been proposed rendering the experiment even more compelling..”
- The t-dependence allows for detailed studies of the reaction mechanism
 - TAC38: “we encourage the effort to understand the non-pole contributions, which should reduce the model dependence in interpreting the data
 - Bonus: if warranted by data, extract the kaon form factor

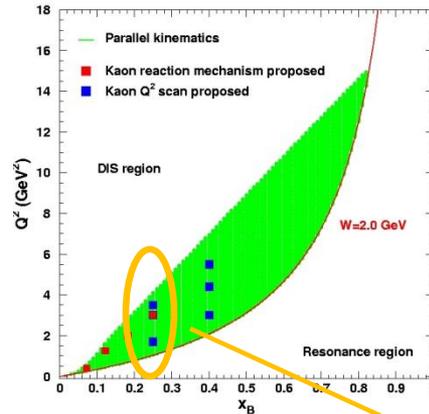
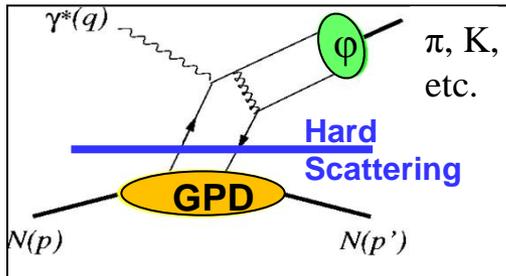
Kaon cross sections: σ_L and σ_T

- E12-09-011 will provide first L/T separated kaon data above the resonance region
- Onset of factorization
- Understanding of hard exclusive reactions
 - QCD model building
 - Coupling constants

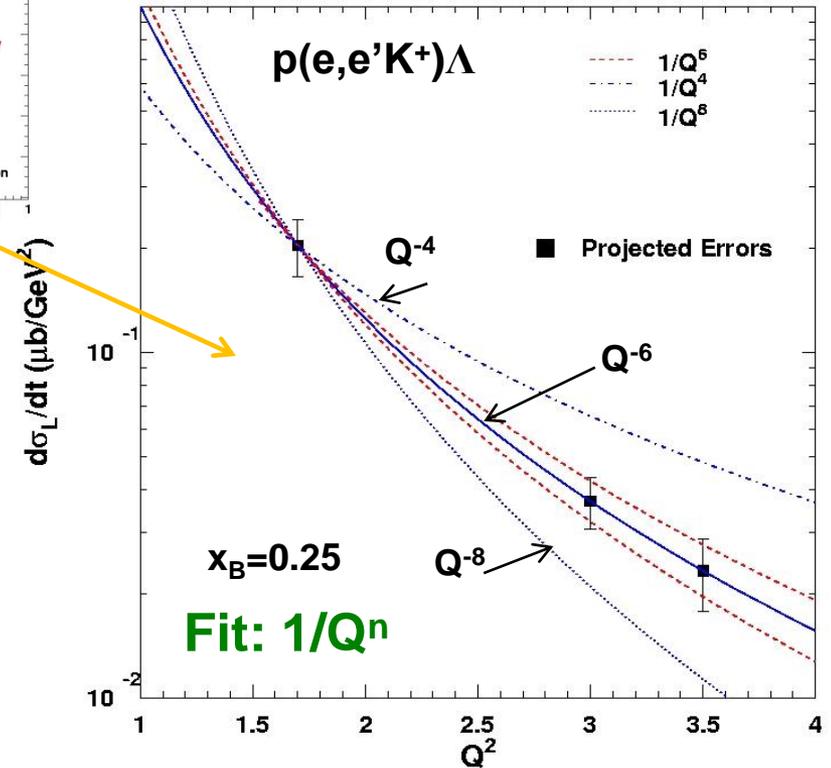
**E12-09-011:
Precision data
for $W > 2.5$ GeV**



Factorization Tests in K^+ Electroproduction



- Compare the Q^2 dependence and magnitude of separated π^+ and K^+ cross sections, and if possible, the form factors
- Will the analogy in the Q^2 -scaling of the pion cross section and form factor also manifest itself for kaons?



Is onset of scaling different for kaons than pions?

Kaons and pions together provide quasi model-independent study