Dear colleagues

Reading through your proposal and the analysis note there are numerous questions left open. I may just present a few of them here as I go through the material. I apologize if for some questions the answer may be found in one of the many documents accompanying the updated proposal and thus might have slipped my attention.

1. Kp S-wave:
   1. A key aspect is the extraction of the Kp S-wave phase shifts from KLF data. However, you do not demonstrate, how this is being done. There is an explicit claim that you assume OPE for the process you study but the material is missing a convincing strategy on how to prove this. Previous experiments have used Chew-Low extrapolations (see old bubble chamber experiments in the late 60’s). You must somehow discriminate against other exchange graphs possible, as could be the rho. Similar to pg(r) -> pp made possible by the chiral anomaly you could imagine Kr -> Kp. Chew-Low gives you the amplitudes at t=mp2 as required. The old bubble chamber experiments didn’t have the data set to do Chew-Low cosq dependent.
   2. You point to the lower invariant mass values for Kp, which certainly will be helpful for theory analysis and the determination of the kappa poles (how much ??), and you point to smaller values of t you can obtain by not reconstructing the recoil proton. However, for the latter issue you do not tell, how you reconstruct t when you do not know either the recoil momentum nor the beam particle momentum. Also, your analysis note is confusing as you point to plots for the resolution in t with and without recoil momentum reconstruction and one figure is just referred to as “??” and missing in the document. Thus, your arguments are hard to follow.
   3. It is unclear how clean your processes depicted in fig. 1 of Moskov’s analysis paper can be singled out. FSI is not considered and the energies seem marginal to separate the two hemispheres of the recoiling system and the forward scattered system. To my mind you would need much higher energies.
   4. You propose various reactions to separate the isospin components for the S-wave and a key ingredient is the Delta as a recoil particle.
   5. Figure 7 of Moskov’s paper: Why should the mass resolution for Kp depend on whether you reconstruct the recoil proton?
   6. How do you calculate the missing mass without exactly knowing the beam momentum?
   7. Your missing mass resolution quoted for the case of the proton recoil reactions worsens with increasing momentum of the beam particles. Isn’t this a problem as highest momenta are crucial to avoid the resonance regions? Here you cannot easily discriminate against D production.
   8. What do you mean by “selection efficiency” in Moskov’s analysis paper?
   9. Figure 12 in this report doesn’t seem to be referenced. What is the mentioned for the different outgoing particles. What is p in this context?
   10. How flat is the angular (cosq) acceptance and does this depend on mass?
   11. How well can you separate S and P waves?
   12. Why is the reconstruction efficiency for t flat in case of the K-p0 final state (fig. 17) as compared to the K-p+ (figs. 8 and 9)?
   13. How comes you access low values of t for reconstructing the Delta as opposed to reconstructing the recoil proton only, which gives you zero acceptance for low t (reconstructed). I am puzzled and probably I am missing something important here.
   14. For Fig 21: do you impose the KL mass in the reconstruction of the invariant KLp mass (e.g. using a constrained fit ??)
   15. Do you have a plot, where you show the expected distribution of events as function of t for all three reactions?
2. K\* spectroscopy
   1. You mention the P-wave in Kp and argue about the differences of Belle tau decays and LASS on the resonance parameters. I do not see this as an issue as the rho parameters are depending on the reaction mechanisms used for its production. Can you extract the (unique) pole positions?