**Volker Burkert:**

1) INTRODUCTION requires major rewriting.   
 a. It is laid out too broadly and discusses things that may be better reserved for a discussion at the end.

***Done***  
 b. It refers to "CLAS" 13 times in  just two pages. There is no need for that and it makes the reading cumbersome and detracts from the main message.

***Done***.  
 c. It is too long. Half the length should be sufficient to discuss the reasons for the measurements and what specifically it adds to the already accumulated volume of data.

***Done.***  
 d. It refers several times that the various Npi and p-pi+pi- electroproduction data "validate" previously published CLAS data. To me that would imply that we are not sure what we published is actually correct. This is not only wrong but could be damaging to CLAS. When we publish data or analysis results our combined statistical, systematic, and model uncertainties should give us confidence that the published results are correct within these uncertainties. Similar phrases are also used in the Results section.  Qualifications such as "reliable" or  "credible" or "remarkably" or  "the successful description" or the "impressive success" and others are out-of-place here.

***Done.***  
e. The phrase "for the first time" is used at least 3 times (line 82, 170, 182).

***Done.***

2) RESULTS and DISCUSSION repeats some of the "validation" comments (e.g. line 633 - 643, 660)

***Done.***  
   Line 749 - 755 The phrase "The reasonable description .... suggests promising prospects..." is not a convincing phase.

***Done.***  
   Line 715: Why not discuss results/interpretation from Legendre Polynomial fits in this section than referring to the web page?.

***Done.***

The JLAB/YePhi models is mention several times as a "reaction model".  
  I don't think this is correct. It is a unitary isobar model with parameterization of the resonance contribution and of the background, similar to MAID. The other model is based on fixed-t dispersion relations to compute the real non-resonant contribution from the resonant amplitudes and add pion pole term.

***Done.***  
   A resonance N(1685)5/2+ is mentioned at least twice. It does not exit in PDG. Probably you meant N(1680)5/2+ also mentioned elsewhere.

***Done.***  
  
3) FIGURES:    
  The kinematics in Fig.1 is not a very good representation. Take a look at Fig.4 in your reference [2]. We could modify that easily for p-pi0.

***Done***  
  The results shown in Fig.17, 21-25 should have bigger markers. The 3rd panel in Fig.24  has strange results at large W, with a huge jump near 1.7 GeV, which looks unphysical. If that is not a mistake than there should be comments in the text explaining the behavior. Also, how can the error at W=1.7 be so large for Q2=0.95 while the data points at neighboring W values have order magnitude smaller errors.

***Done. There was a mistake in the way I draw the picture.***

Introduction: Should be significantly shortened. But if following sentences remain please make corrections:

***The introduction was updated.***line 24: "behind" => "underlying"

***Done***  
line 39: "Analyses ..... has provided.." => "Analyses ... have provided.."

***Done***  
line 57: " From the studies of data on pi+pi-P electroproduction..." => From the study of pi+pi-p electroproduction....".

***Done***  
line 68: "gpN\* electrocouoplings.. " => The gpN\* electrocouplings..."

***Done***  
line 79: add reference to V. Braun on LCSR

***Done***  
line 93: for consistency replace " the transition N->N\* electroexcitation amplitudes .." with "the gNN\* electrocouplings..".

***Done***  
line 115: delete "will"

***Done***  
line 118-121: make period after "running mass" and start new sentence "They elucidate.."

***Done***  
line 125: end sentence after "numbers" and begin new sentence "They will also shed new light on dynamical ..."

***Done***.  
line 150: "has" => "have"  (data is plural datum).

***Done***  
line 159: "for the studies of the .." => "for studies of the.."

***Done***  
line 167: "isospin selection rule"?? Im not sure I would call this a selection rule. Isn't that just an isospin CG coefficient?

***Done***  
line 174-177: Somewhat awkward sentence.

***Changed.***  
line 186: "..validating the credible extraction.." => "''verifying the consistency of the results"

***Done***  
line 215: four momentum transfer Q^2 => "photon virtuality Q^2"

***Done***  
line219-220: W is not an invariant mass but the (e,e')X missing mass M\_X.

***Done.***

EXPERIMENTAL  SETUP, DATA taking, PARTICLE ID .....  
These sections before "RESULTS and DISCUSSION" are all written in the past tense because CLAS doesn't exist anymore. I don't think that is a good choice.  The paper could have been written at the time CLAS was still operational. I think it is better to write the text in the  present tense.The fact that CLAS was decommissioned  in 2012 is irrelevant for the paper. The first sentence should end after Jefferson Lab.

***Done***  
line 806: "data support: => "data qualitatively support". (there is no quantitative comparison).

***Done***.  
line 850: "a reasonable description" => "an approximate description".

***Done*.**  
line 861-863: Rewrite as " In fact, the two lightest of the \Delta states in the third resonance region, \Delta(16201/2- and \Delta{1700}3/2- , decay preferentially ...."

***Done.***  
line 873- 879: A repetition of similar comments earlier. Again "check the credibility" is not a good phrase to use in scientific work. Maybe "confirmation of the analysis results in other channels."

***Done.***

**Stepan Stepanyan**

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- definition of \phi\_{\pi^0}, \theta\_{p\_1}, and \theta\_{p\_2}

***definition added in the section “channel identification”.***   
- fit to \pi^0 peak on Fig. 7 to justify cut m^2\_X>-0.02 GeV^2

***Done***  
- showing the Q^2 vs. W distribution would have been nice

***Done, see Fig. 9***- page 7, line 454,  do not think you need "the" in front of "Faraday Cup"

***Done***  
- will be good to give an average fraction of subtracted contribution from the target walls

* ***Done in the text of the paper, (section Target wall subtraction  ) average value of the correction is less then 5%.***

"Radiative corrections", it is not clear how exactly it is done, the MAID07 that is used for modeling the cross section has radiative effects already, as stated on line 503, then how EXCLURAD fits here?

***MAID predictions themselves are without the radiative correction. For the purpose of the events generator, we use the Mo Tsai correction on top of the standard model output******to mimic data better. Exclurad provides a better estimation of the radiative correction (at the price of the longer calculations) and is used for the final RC correction calculations.***- what is the definition of the \Delta\phi\_{CMS} in Table III

***Fixed, there was a typo there. It is $\phi\_{\pi^{0}}.***  
- usually normalization uncertainty means uncertainties due to knowledge of the integrated luminosity (beam charge and target density). Here looks like this systematic uncertainties was derived from comparing elastic (Fig. 11) and inclusive electron scattering cross sections with world parallelizations, which is fine but as Fig. 11 shows the 5% variation is strongly electron angle dependent and hints on the detector efficiency variations (e.g. due to TOF efficiency). Labeling this as "normalization" is not exactly correct, but most importantly these variations will be different for elastic/inclusive and pi0 production, and can depend on kinematics. Did this was studied?

***Yes, it was studied. We perform a study if the inclusive electron cross section in the full W and Q2range covered in the paper (included in the analysis note) and found it to be in a reasonable agreement with available models.***- line 807, "supports"

***Done***  
- there is inconsistency in Figures 21 to 25, some have legends on the plot some do not

***Done***  
- the caption of Figures 21 and 26, citation [6] is in the wrong spot? maybe should be after "extractions" -> "with the model extraction using [6] with electrocuting ..."

***Done.***  
- line 846 "JLAB/YerPhI model [6], ..."

***Done*.**  
- interestingly enough not much discussions on comparison of data and the model on Fig. 21 to 25. Model does not describe data for most of the phase space with different contributions turned on/off

***Done.***  
- what contributes to very large systematic uncertainty for W~1.7 in Fig.24 for Q^2=0.95 GeV^2

***This point is located right at the border of the phase space (the previous plots was wrong and is now corrected).***

**Daniel Carman:**

General:  
- Use "(Color online)" in all figure captions for which you have a figure that uses color. You have done this for some, but not all, figures.

***Done***- You have a typesetting issue where units are sometimes separated from their corresponding values across lines. To avoid this in latex use, e.g., "2.5~GeV".

**Done**  
- You are not consistent in your notation with cos theta. Sometimes you use "$\cos\theta$" and sometimes you use "$\cos \theta$". Choose one and use it throughout for your cosine notation.

***Done***  
- Put the figures in the order in which they are cited in the text. Things get a bit random starting with Fig. 21.

***Done*.**  
Page 1:  
- Abstract:  
  - Line 4. Use "center-of-mass".

***Done***  - Line 7. Use "high-lying".

***Done***  
  - Line 9. Use "... both single- and double-pion electroproduction, ...".

***Done***  
- Right column:  
  - Line 55. Should not begin a new paragraph.

***This chapter is rewritten***  
  - Line 63. Use "model-independent".

***This chapter is rewritten***  
  - Line 78. Use "... framework of the continuum QCD Dyson-Schwinger Equation (DSE) approach ...".

***Done***  
Page 2:  
- Left column:  
  - Line 96. Use "... for the generation ...".

***Done*.**  
  - Line 106. Use "momentum-dependent".

***This chapter is rewritten***  
  - Line 127. Use "... that are chiral parity partners ...".

***This chapter is rewritten***  
- Right column:  
  - Line 165. Use "... resonance electrocouplings.".

***The chapter was rewritten.***  - Line 166. Use "... electroproduction channel offers preferential ... for the exploration of ...".

***Done*.**  
  - Line 177. Use "Recently, new CLAS ...".

***Done*.**  
  - Line 192. Use "... for both electrons ($e$) and protons ($p$) ...".

***The chapter was rewritten.***Page 3:  
- Left column:  
  - Line 193. Use "Event selection was completed ...".

***The chapter was rewritten*.**  
  - Line 196. Use "... bin centering were developed ...".

***The chapter was rewritten.***  - Line 198. Use "... normalization was checked against ...".

***The chapter was rewritten.***  
  - Line 199. Use "... systematic uncertainties were identified.".

***The chapter was rewritten.***  - Line 201. Use "... $W$ regions and estimates are provided of the resonance contribution into the cross section. The extracted Legendre polynomial moments show the sensitivity ...".

***The chapter was rewritten.***- Right column:  
  - Fig. 1. Poor quality figure. Hard to read labels for pi0, theta, phi.

***Updated.***  
Page 4:  
- Left column:  
  - Line 260. Use "... [47] were used for ...".

***The whole chapter was rewritten in the present tense.***  - Line 290. Use "The EC were used to ...".

***Done.***- Right column:  
  - Line 291. Use "minimum-ionizing".

***Done.***  - Line 294. Use "For particles that hit the calorimeter ...".

***Done.***  - Fig. 2 and Fig. 3 captions. Use "... axis represents the number of events.".

***Done.***  
Page 5:  
- Fig. 4 and Fig. 5 captions. Use "... axis represents the number of events.".

***Done.***- Right column:  
  - Line 371. Use "The actual average beam position was ...".

***Done*.**  
Page 6:  
- Left column:  
  - Line 385. Use "Instead, we reconstructed the four-vector ...".

***Done*.**- Right column:  
  - Fig. 8 caption. Use "... axis represents the number of events.".

***Done.***  
  - Line 420. Use "... for reliable $\pi^0$ separation.".

***Done*.**  
  - Line 422. Use "... was necessary in order to limit ...".

***The whole chapter was rewritten in the present tense.***  - Line 424. Use "... cut was accounted for in ...".

***The whole chapter was rewritten in the present tense.***  - Line 426. Use "... finalized our exclusive event selection.".

***The whole chapter was rewritten in the present tense.***  - Line 440. Use "... (see Fig. 9 and Table I) ...".

***Done****.*Page 7:  
- Left column:  
  - Line 442. Use "... (see Fig. 10 and Table II) ...".

***Done.***  
- Right column:  
  - Line 464. Use "... to monitor the Faraday Cup performance and ...".

***Done.***  - Line 476. Use "These windows were made of 15~$\mu$m aluminum foil.".

***Done.***  - Line 480. Use "... same particle identification procedure ...".

***Done.***  - Line 481. Use "... identification, was applied to the ...".

***Done.***  
Page 8:  
- Left column:  
 - Line 494. We did not have surveyed magnetic field for the torus in CLAS and relied only on FEA calculations from OPERA/TOSCA

***Done***.  
- Right column:  
  - Line 540. Use "... section might not vary ...".

***Done***  
  - Line 544. Use "... evaluate the corrections. We divided each bin over ...".

***Done***  
Page 9:  
- Right column:  
  - Table III caption. Use "... the systematic uncertainties.".

***Done***  
Page 10:  
- Left column:  
 - Fig. 15 caption. Use "\cos"

***Done.***- Right column:  
 - Line 582. Use "... proton identification, tracking ...".

***Done***  
Page 11:  
- Left column:  
  - Line 608. Use mC for units, not C.

***Done*.**  
  - Line 615. E\_TOF is not explained anywhere in the paper as is indicated. This definitely needs to be addressed somewhere.

***Done, added in the normalization section.***- Right column:  
  - Line 670. Use "electrocouplings".

***Done*.**  
Page 12:  
- Fig. 17 caption:  
  - Line 3. Use "The systematic uncertainties are shown by the shadowed areas at the bottom of the plots.".

***Done***- Fig. 18 caption:  
  - Add "The systematic uncertainties are shown by the shadowed areas at the bottom of the plots.".

***Done***  
Page 13:  
- Left column:  
  - After line 717. Another paragraph is needed here to add some degree of interpretation of what the Legendre moments indicate. Also, why did you choose to show only C1 and A0 and none of the B terms?

***Done, add B terms as well***.  
- Right column:  
  - Line 738. Use "... sections as a function of ...".

***Done.***Page 14:  
- Fig. 19 caption. Use "The shaded bands represent the systematic uncertainties.". This comment is also applicable for Figs. 20, 21, 22, 23, 24, and 25.

***Done***.  
- Left column:  
  - Line 765. Use "... final state due to isospin ...".

***The whole sentence was changed.***- Right column:  
  - Line 785. Use "model-independent".

***Done.***  - Line 792. Use "This was shown in the ...".

***Done.***  
Page 15:  
- Left column:  
 - Line 805. Use "... when the $A\_{1/2} ...".

***Done***.  
 - Line 818. Use "... + \epsilon \sigma\_L$ (Fig. 23) ...".

***Done***  
 - Line 824. Use "... the combined studies of all exclusive structure functions are of particular ...".

***Done***- Right column:  
 - Line 851. Use "... data with the JLab/YerPhi model ...".

***Done*.**  
 - Line 860. Use "... decays of isospin 3/2 ...".

***Done*.**  
  
References:  
- [12] overlaps the next column.

***Done***- [19]. Use "M. Ungaro {\it et al.} ...".

***Done***- [40] Use "K. Park {\it et al.} ..."

***Done***- [57] Use "V. I. Mokeev and I. G. Aznauryan, ...".

***Done***  
Page 18:  
- Fig. 21 caption. Use "... model expectations with the $\Delta(1620)1/2^-$ resonance turned on/off: ...".

***Done***- Fig. 22 caption. Use "... Legendre moment at different photon virtualities $Q^2$ as a function of ...".

***Done***.  
Page 19:  
 - Fig. 24 caption. Use "... Legendre moment at different photon virtualities ...".

***Done***  
Page 20:  
- Fig. 25 caption. Use "$\sigma\_{TT}$ unpolarized structure function at ...".

***Done***