

Comments for the Referee:

The following changes were implemented into the proceeding:

Original Sentence	Corrected Sentence
We have fitted our data with a Partial-Wave Analysis that includes see e.g. summary tables in \cite{Gal:2010eg,Gal:2013vx},	We have analyzed our data with a Partial-Wave Analysis that includes see e.g. summary tables in Refs. \cite{Gal:2010eg,Gal:2013vx},
impinged on a fixed liquid hydrogen target.	impinged on a liquid hydrogen target.
This final state is interesting, as it contains the end products of one of the four decay channels	This final state is interesting, as it contains the decay products of one of the four decay channels
manifest itself as a 'bump' in the $p\Lambda$ invariant mass spectrum	manifest itself as a bump in the $p\Lambda$ invariant mass spectrum
If ... decay width is, however, small the background description	If ... decay width is, however, small, the background description
As the kinematic in the $pK^+\Lambda$ final state is rather complex due to the presence of intermediate N^* resonances ($\rightarrow K^+\Lambda$) [47,48] the	As the kinematics of the $pK^+\Lambda$ final state is rather complex due to the presence of intermediate N^* resonances ($\rightarrow K^+\Lambda$) [47,48], the
can be implemented consistently with its correct quantum numbers	can be implemented consistently with correct quantum numbers
The first are events in which ... spectrometer; and the second are events in which	I) in which ... spectrometer; and II) in which
cuts in the dE/dx vs. momentum spectrum.	cuts in the dE/dx vs. momentum distribution.
After the particle identification the events were tested with a kinematic fit to the exclusive production of the three particles $p\Lambda K^+$	After the particle identification a kinematic fit of an exclusive $p\Lambda K^+$ production is applied to the each selected event.
...fulfilled by the four vectors of the particles.	...fulfilled by the four-vectors of the particles.
Further, does it test whether the invariant mass of the p and the π^- deliver a mass...	Furthermore it tests whether the invariant mass of the p and the π^- delivers a mass...
Events with a good fit quality were selected for the further data analysis.	Events with good fit quality were selected for further data analysis.
These selected events are in the further process used as input events for a partial wave analysis.	These selected events are then used as input events for a partial wave analysis.
The partial wave analysis uses as input the four vectors from the three measured particles p , Λ and K^+ as well as phase space simulations, both inside the acceptance of the spectrometer. That has the advantage that errors due to an acceptance correction are avoided.	From these selected events the partial wave analysis uses the four-vectors from the three measured particles p , Λ , and K^+ as well as phase space simulations as input. Both sets of four-vectors are reduced to the acceptance of the spectrometer, implying the advantage that errors due to an acceptance correction are avoided.
of N^* resonances, listed in the	of N^* resonances listed in the PDG

PDG, that have an observed	that have an observed
Further, the production of $\Sigma K^+ \Lambda$ can proceed via a non-resonant formation,	Furthermore, the production of $\Sigma K^+ \Lambda$ can proceed via non-resonant formation,
the kaonic cluster production was excluded from the process to check	the kaonic cluster production was excluded from to check
Both data sets are fitted simultaneously	Both data sets were fitted simultaneously
The result of the fit are the parameters $a_{\{1\}}$ and $a_{\{2\}}$ for each transition wave.	The result of the fit are the values of the parameters $a_{\{1\}}$ and $a_{\{2\}}$ for each transition wave.
categorized according to the likelihood value	categorized according to the minimum likelihood value
state with a kaonic nuclear bound state could	state containing a kaonic nuclear cluster could
in the experimental data, might lead to	In the experimental statistic, will lead to
only the remaining events were fitted	only the remaining statistic was fitted
; then this result was compared to	; then the new PWA solution was compared to
one with all data, one with only events outside the mass range...	one including all data, one including only events outside the mass range ...
acceptance ranges HADES and WALL while only the HADES events were	acceptance ranges HADES and WALL. Here, only the HADES events were
By a comparison of the three results one	By comparing the three results one
The right panels of Figure show a	The right panels of Figure 2 show a
checks where once events were rejected from the fit with a mass range of 2200--2300 MeV/ c^2 (violet points) and once where a mass range	checks where I) events were rejected from the fit with a mass range of 2200--2300 MeV/ c^2 (violet points) and II) where a mass range
as in this solution the high masses were rejected from the fit.	as in this solution this mass range was explicitly included into the fit.
does not bias the interpretation of the measured data, with	does not bias their interpretation with
And consequently, only the determination of an upper limit...	As a consequence, only the determination of an upper limit...
which describes the possible kaonic cluster production	which constrains a possible kaonic cluster production
6. A New Signal or Not?	6. Is There a New Signal or Not
produced a signal of the cluster,	produced a visible signal of the cluster,
...a possible kaonic cluster intermediate state.	...a possible intermediate kaonic cluster state.

The suggestion miss-identification (instead of mis-identification) was not accepted.

Question:

The particle detected in the Forward Wall was assumed to be a proton by an event hypothesis.??

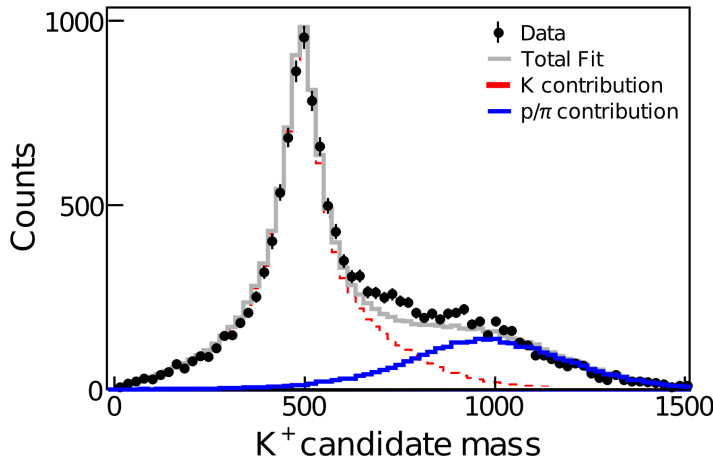
Explanation/Text modification:

The particle detected in the Forward Wall can not be assigned with a PID as no underlying information is available. According to simulations, however, the hit in the forward wall is with a high probability (~90%) due to a proton and, thus, this assumption is used for the further analysis.

Question:

Kaons with a mass between 0–680 MeV/c² (HADES) and 230–640 MeV/c² (WALL) were accepted...?

Explanation:



This is the mass distribution of the kaon candidates. Due to the previous event selection the background is only located at the high mass tail of the distribution.

The figure is taken from

Eliane Epple "Measurable Consequences of an Attractive KN Interaction" Doctoral dissertation thesis, Technische Universität München, 2014.

The suggestion to change the title: 7. How to Obtain an Upper Limit was rejected as the section deals with the principle way how we obtain our upper limit. We do not report on its value.

Included into the document:

\section{Conclusions}

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Due to the presence of intermediate N* resonances a model description of the $pK^+\Lambda$ final state is complex.

The partial wave analysis with help of the Bonn-Gatchina framework is an elegant solution of this problem, which allowed us to derive a description of the measured event distributions.

While we aim to describe background processes that do not contain a kaonic cluster signal cross checks showed that the PWA result not disturbed

if possible signal events are included into the analysis.

A statistical analysis of bin by bin fluctuations showed no significant deviation of the data from the PWA model which could be attributed to a new signal.

We have thus continued to determine an upper limit on the production strength of the kaonic nuclear cluster in the reported reaction with help of the $\$CL_{\{s\}}\$$ method. The final result will be reported soon.