

$\Phi(1860)$

$I(J^P) = \frac{3}{2}(?)$

NODE=B153

OMITTED FROM SUMMARY TABLE

ALT 04 with 1640 Ξ^- candidates in pp reaction at $\sqrt{s} = 17.2$ GeV sees peaks in the $\Xi^- \pi^-$ and $\Xi^- \pi^+$ mass spectra. The minimum quark content would be $ssdd\bar{u}$.

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However:

- ADAMOVICH 04 with 676k Ξ^- candidates in Σ^- -nucleus reactions at a mean Σ^- momentum of 340 GeV/c finds no evidence for the peak.
- Neither does SCHAEI 04 in a search in 3.5M Z decays.
- FISCHER 04 claims the ALT 04 result is inconsistent with the 40-year accumulation of $\Xi\pi$ spectra, and also with the absence of any hint of the $\Theta(1540)^+$ in their experiment.
- ABT 04A finds no evidence in p -nucleus reactions at mid-rapidity and $\sqrt{s}=41.6$ GeV.
- AIRAPETIAN 05 finds no evidence in quasi-real photoproduction of $\Xi^- \pi^\pm$ with 27.6-GeV e^+ incident on deuterium.
- CHEKANOV 05 finds no evidence in deep-inelastic ep scattering at c.m. energies of 300 and 318 GeV.
- AGEEV 05 finds no evidence in quasi-real photoproduction with 160-GeV muons on an LiD target.
- AUBERT,B 05D in $e^+e^- \rightarrow \Xi^- \pi^\pm X$ (and charge conjugates) finds 24,000 $\Xi(1530)^0$ and 8,000 $\Xi_c(2470)^0$ but no $\Phi(1860)^0$ or $\Phi(1860)^{--}$.
- CHRISTIAN 05 finds no evidence in $pp \rightarrow p_{\text{fast}} X$ at 800-GeV incident momentum.
- ABULENCIA 07 finds no evidence in $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV.

$\Phi(1860)$ MASS

NODE=B153205

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1862±2	36	¹ ALT	04	NA49 $pp, \sqrt{s} = 17.2$ GeV

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$\Phi(1860)$ WIDTH

NODE=B153210

VALUE (MeV)	CL%	DOCUMENT ID	TECN	COMMENT
<18	90	¹ ALT	04	NA49 $pp, \sqrt{s} = 17.2$ GeV

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¹ ALT 04 estimates a peak of 38 $\Xi^- \pi^-$ events above a background of 43 events and claims a significance of 4.2 standard deviations. Combining $\Xi^- \pi^-$, $\Xi^- \pi^+$, $\Xi^+ \pi^+$, and $\Xi^+ \pi^-$ events, ALT 04 estimates a peak of 69 over a background of 75, for 5.8 σ . However, when the number of bins searched in is taken into account, the significance falls to 4.2 σ .

NODE=B153;LINKAGE=A

$\Phi(1860)$ REFERENCES

NODE=B153

ABULENCIA	07	PR D75 032003	A. Abulencia <i>et al.</i>	(FNAL CDF Collab.)
AGEEV	05	EPJ C41 469	E.S. Ageev <i>et al.</i>	(CERN COMPASS Collab.)
AIRAPETIAN	05	PR D71 032004	A. Airapetian <i>et al.</i>	(HERA HERMES Collab.)
AUBERT,B	05D	PRL 95 042002	B. Aubert <i>et al.</i>	(BABAR Collab.)
CHEKANOV	05	PL B610 212	S. Chekanov <i>et al.</i>	(HERA ZEUS Collab.)
CHRISTIAN	05	PRL 95 152001	D.C. Christian <i>et al.</i>	(FNAL E690 Collab.)
ABT	04A	PRL 93 212003	I. Abt <i>et al.</i>	(HERA B Collab.)
ADAMOVICH	04	PR C70 022201R	M.I. Adamovich <i>et al.</i>	(CERN WA89 Collab.)
ALT	04	PRL 92 042003	C. Alt <i>et al.</i>	(CERN NA49 Collab.)
FISCHER	04	EPJ C37 133	H.G. Fischer, S. Wenig	(CERN)
SCHAEI	04	PL B599 1	S. Schael <i>et al.</i>	(ALEPH Collab.)

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