$\Phi(1860)$

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

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 $s s d d \overline{u}$.

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 SCHAEL 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 $e p$ 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 $p p \rightarrow p_{\text{fast}} X$ at 800-GeV incident momentum.
- ABULENCIA 07 finds no evidence in $p \overline{p}$ collisions at $\sqrt{s} = 1.96$ TeV.

$\Phi(1860)$ MASS

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

$\Phi(1860)$ WIDTH

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

[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 $\Xi^- \pi^-$, $\Xi^- \pi^+$, $\overline{\Xi}^+ \pi^+$, and $\overline{\Xi}^+ \pi^-$ events, ALT 04 estimates a peak of 69 over a background of 75, for $5.8\,\sigma$. However, when the number of bins searched in is taken into account, the significance falls to $4.2\,\sigma$.

$\Phi(1860)$ REFERENCES

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