

# Φ(1860)

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

## OMITTED FROM SUMMARY TABLE

ALT 04 with 1640  $\Xi^-$  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  $ssdd\bar{u}$ .

However:

- ADAMOVICH 04 with 676k  $\Xi^-$  candidates in  $\Sigma^-$ -nucleus reactions at a mean  $\Sigma^-$  momentum of 340 GeV/c finds no evidence for the peak.
- Neither does SCHAEEL 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.

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### Φ(1860) MASS

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

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### Φ(1860) WIDTH

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

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<sup>1</sup>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  $\sigma$ . However, when the number of bins searched in is taken into account, the significance falls to 4.2  $\sigma$ .

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### $\Phi(1860)$ REFERENCES

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)
SCHAEEL	04	PL B599 1	S. Schael <i>et al.</i>	(ALEPH Collab.)

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