

$f'_2(1525)$

$$I^G(J^{PC}) = 0^+(2^{++})$$

$f'_2(1525)$ MASS

VALUE (MeV)DOCUMENT ID**1525 ± 5 OUR ESTIMATE** This is only an educated guess; the error given is larger than the error on the average of the published values.

PRODUCED BY PION BEAM

VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •

1521 ± 13		TIKHOMIROV 03	SPEC	40.0	$\pi^- C \rightarrow K_S^0 K_S^0 K_L^0 X$
1547 ⁺¹⁰ ₋₂		¹ LONGACRE 86	MPS	22	$\pi^- p \rightarrow K_S^0 K_S^0 n$
1496 ⁺⁹ ₋₈		² CHABAUD 81	ASPK	6	$\pi^- p \rightarrow K^+ K^- n$
1497 ⁺⁸ ₋₉		CHABAUD 81	ASPK	18.4	$\pi^- p \rightarrow K^+ K^- n$
1492 ± 29		GORLICH 80	ASPK	17	$\pi^- p$ polarized $\rightarrow K^+ K^- n$
1502 ± 25		³ CORDEN 79	OMEG	12–15	$\pi^- p \rightarrow \pi^+ \pi^- n$
1480	14	CRENNELL 66	HBC	6.0	$\pi^- p \rightarrow K_S^0 K_S^0 n$

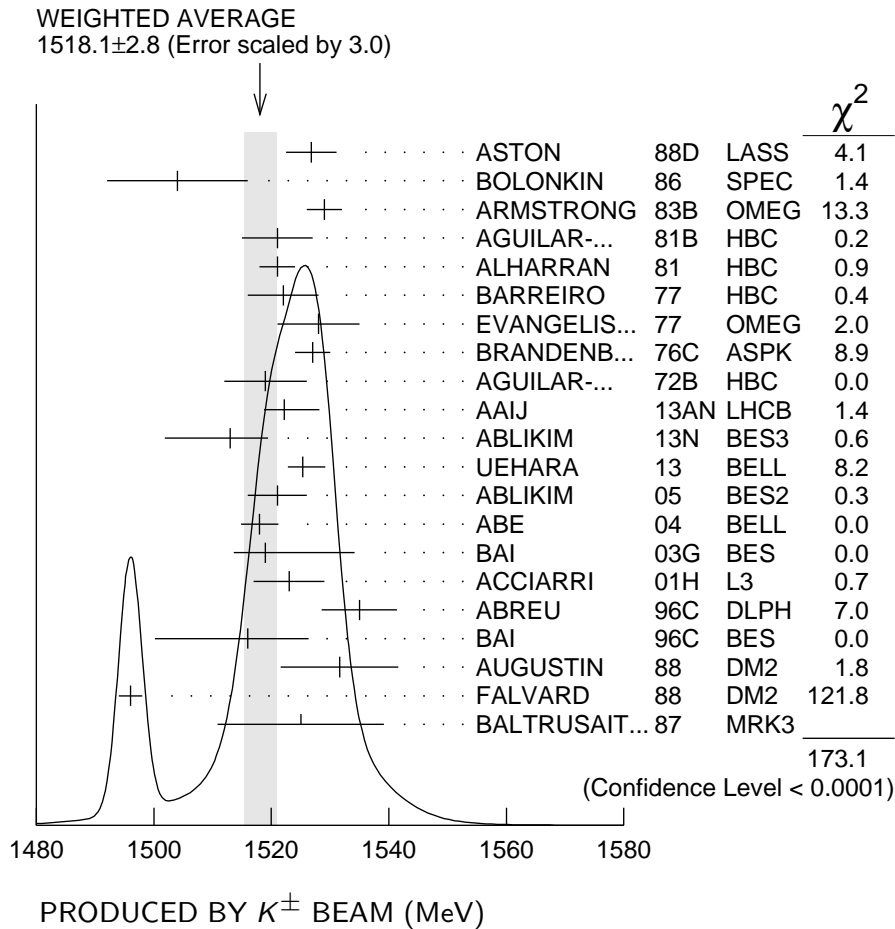
PRODUCED BY K^\pm BEAM

VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT**1518.1 ± 2.8 OUR AVERAGE** Includes data from the datablock that follows this one. Error includes scale factor of 3.0. See the ideogram below.

1526.8 ± 4.3		ASTON 88D	LASS	11	$K^- p \rightarrow K_S^0 K_S^0 \Lambda$
1504 ± 12		BOLONKIN 86	SPEC	40	$K^- p \rightarrow K_S^0 K_S^0 Y$
1529 ± 3		ARMSTRONG 83B	OMEG	18.5	$K^- p \rightarrow K^- K^+ \Lambda$
1521 ± 6	650	AGUILAR-... 81B	HBC	4.2	$K^- p \rightarrow \Lambda K^+ K^-$
1521 ± 3	572	ALHARRAN 81	HBC	8.25	$K^- p \rightarrow \Lambda K \bar{K}$
1522 ± 6	123	BARREIRO 77	HBC	4.15	$K^- p \rightarrow \Lambda K_S^0 K_S^0$
1528 ± 7	166	EVANGELIS... 77	OMEG	10	$K^- p \rightarrow K^+ K^- (\Lambda, \Sigma)$
1527 ± 3	120	BRANDENB... 76C	ASPK	13	$K^- p \rightarrow K^+ K^- (\Lambda, \Sigma)$
1519 ± 7	100	AGUILAR-... 72B	HBC	3.9, 4.6	$K^- p \rightarrow K \bar{K} (\Lambda, \Sigma)$

• • • We do not use the following data for averages, fits, limits, etc. • • •

1514 ± 8	61	BINON 07	GAMS	32.5	$K^- p \rightarrow \eta \eta (\Lambda / \Sigma^0)$
1513 ± 10		⁴ BARKOV 99	SPEC	40	$K^- p \rightarrow K_S^0 K_S^0 y$



PRODUCED IN e^+e^- ANNIHILATION AND PARTICLE DECAYS

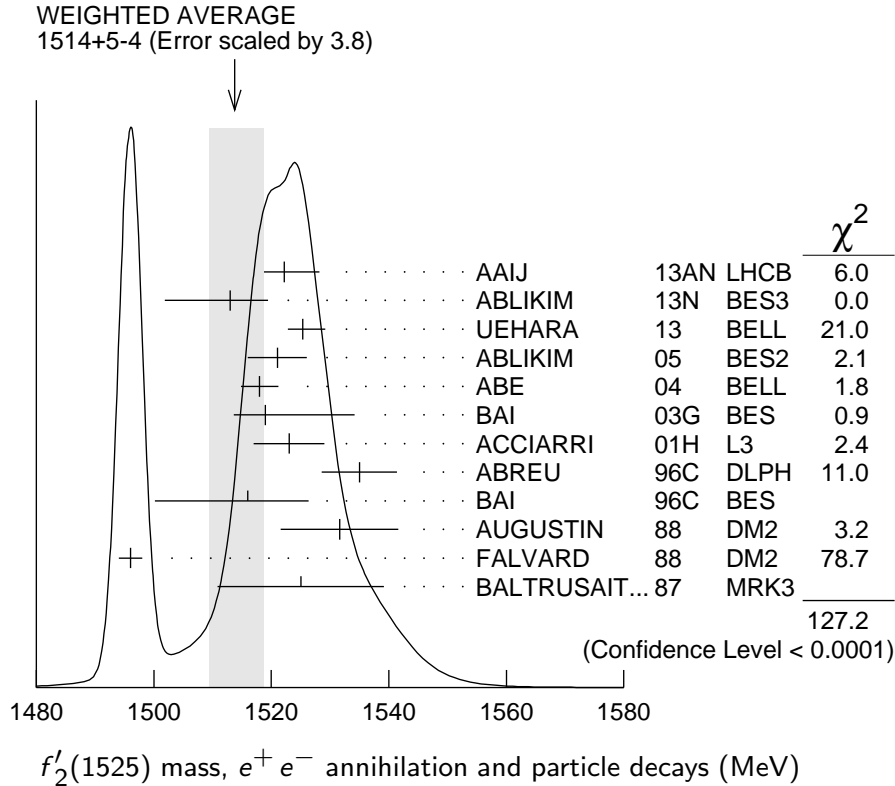
VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
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The data in this block is included in the average printed for a previous datablock.

1514 $\pm \frac{5}{4}$ OUR AVERAGE Error includes scale factor of 3.8. See the ideogram below.

1522.2 ± 2.8 ^{+5.3} _{-2.0}		AAIJ	13AN LHCB	$\bar{B}_s^0 \rightarrow J/\psi K^+ K^-$
1513 ± 5 ⁺⁴ ₋₁₀	5.5k	⁵ ABLIKIM	13N BES3	$e^+e^- \rightarrow J/\psi \rightarrow \gamma\eta\eta$
1525.3 ^{+1.2} _{-1.4} ^{+3.7} _{-2.1}		UEHARA	13 BELL	$\gamma\gamma \rightarrow K_S^0 K_S^0$
1521 ± 5		ABLIKIM	05 BES2	$J/\psi \rightarrow \phi K^+ K^-$
1518 ± 1 ± 3		ABE	04 BELL	10.6 $e^+e^- \rightarrow e^+e^- K^+ K^-$
1519 ± 2 ⁺¹⁵ ₋₅		BAI	03G BES	$J/\psi \rightarrow \gamma K \bar{K}$
1523 ± 6	331	⁶ ACCIARRI	01H L3	91, 183–209 $e^+e^- \rightarrow e^+e^- K_S^0 K_S^0$
1535 ± 5 ± 4		ABREU	96C DLPH	$Z^0 \rightarrow K^+ K^- + X$
1516 ± 5 ⁺⁹ ₋₁₅		BAI	96C BES	$J/\psi \rightarrow \gamma K^+ K^-$

1531.6 ± 10.0		AUGUSTIN	88	DM2	$J/\psi \rightarrow \gamma K^+ K^-$
1496 ± 2		⁷ FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$
1525 ± 10 ± 10		BALTRUSAIT..	87	MRK3	$J/\psi \rightarrow \gamma K^+ K^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
1532 ± 3 ± 6	644	^{8,9} DOBBS	15		$J/\psi \rightarrow \gamma K^+ K^-$
1557 ± 9 ± 3	113	^{8,9} DOBBS	15		$\psi(2S) \rightarrow \gamma K^+ K^-$
1526 ± 7	29	¹⁰ LEES	14H	BABR	$e^+ e^- \rightarrow K_S^0 K_S^0 K^+ K^- \gamma$
1523 ± 5	870	¹¹ SCHEGELSKY	06A	RVUE	$\gamma\gamma \rightarrow K_S^0 K_S^0$
1515 ± 5		¹² FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$



PRODUCED IN $\bar{p}p$ ANNIHILATION

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
1512 ± 4 OUR AVERAGE			
1513 ± 4	AMSLER 06	CBAR	0.9 $\bar{p}p \rightarrow K^+ K^- \pi^0$
1508 ± 9	¹³ AMSLER 02	CBAR	0.9 $\bar{p}p \rightarrow \pi^0 \eta \eta, \pi^0 \pi^0 \pi^0$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
1530 ± 12	¹⁴ ANISOVICH 09	RVUE	0.0 $\bar{p}p, \pi N$

CENTRAL PRODUCTION

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
1515 ± 15	BARBERIS 99	OMEG	450 $pp \rightarrow p_s p_f K^+ K^-$

PRODUCED IN $e p$ COLLISIONS

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$1512 \pm 3^{+1.4}_{-0.5}$		¹⁵ CHEKANOV 08	ZEUS	$e p \rightarrow K_S^0 K_S^0 X$

• • • We do not use the following data for averages, fits, limits, etc. • • •

1537^{+9}_{-8}	84	¹⁶ CHEKANOV 04	ZEUS	$e p \rightarrow K_S^0 K_S^0 X$
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¹ From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

² CHABAUD 81 is a reanalysis of PAWLICKI 77 data.

³ From an amplitude analysis where the $f_2'(1525)$ width and elasticity are in complete disagreement with the values obtained from $K\bar{K}$ channel, making the solution dubious.

⁴ Systematic errors not estimated.

⁵ From partial wave analysis including all possible combinations of 0^{++} , 2^{++} , and 4^{++} resonances.

⁶ Supersedes ACCIARRI 95J.

⁷ From an analysis including interference with $f_0(1710)$.

⁸ Using CLEO-c data but not authored by the CLEO Collaboration.

⁹ From a fit to a Breit-Wigner line shape with fixed $\Gamma = 73$ MeV.

¹⁰ From a fit to a Breit-Wigner line shape plus a second-order polynomial function. Systematic errors not evaluated.

¹¹ From analysis of L3 data at 91 and 183–209 GeV.

¹² From an analysis ignoring interference with $f_0(1710)$.

¹³ T-matrix pole.

¹⁴ 4-poles, 5-channel K matrix fit.

¹⁵ In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a_2^0(1320)$, and $f_2'(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background.

¹⁶ Systematic errors not estimated.

 $f_2'(1525)$ WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>COMMENT</u>
73^{+6}_{-5} OUR FIT		
76 ± 10	PDG 90	For fitting

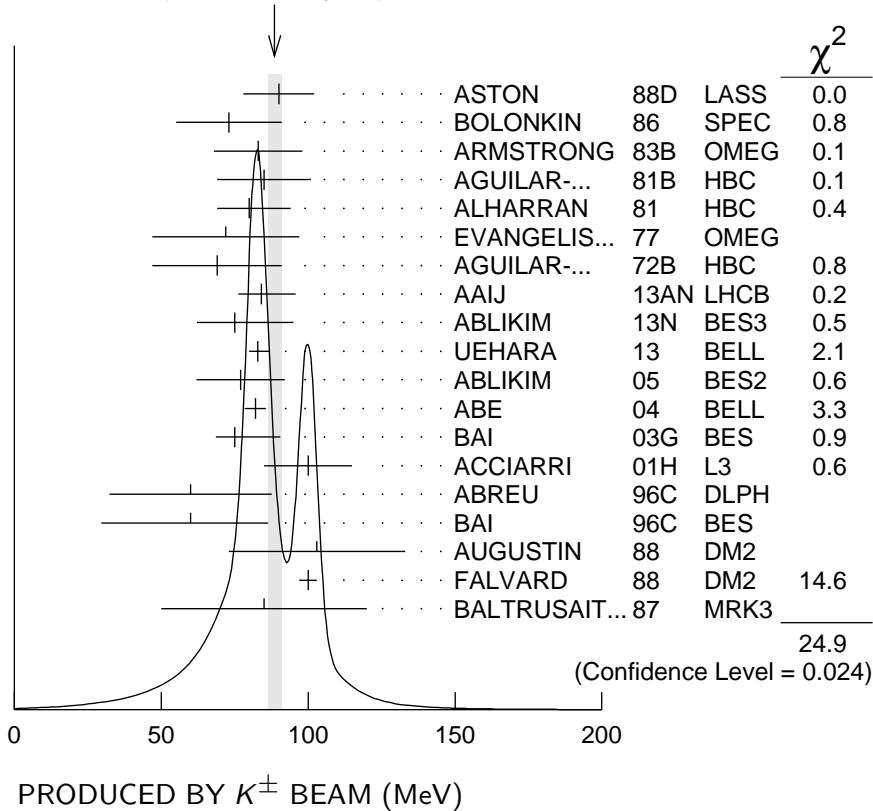
PRODUCED BY PION BEAM

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
102 ± 42	TIKHOMIROV 03	SPEC	$40.0 \pi^- C \rightarrow K_S^0 K_S^0 K_L^0 X$
108^{+5}_{-2}	¹⁷ LONGACRE 86	MPS	$22 \pi^- p \rightarrow K_S^0 K_S^0 n$
69^{+22}_{-16}	¹⁸ CHABAUD 81	ASPK	$6 \pi^- p \rightarrow K^+ K^- n$
137^{+23}_{-21}	CHABAUD 81	ASPK	$18.4 \pi^- p \rightarrow K^+ K^- n$
150^{+83}_{-50}	GORLICH 80	ASPK	$17 \pi^- p \text{ polarized} \rightarrow K^+ K^- n$
165 ± 42	¹⁹ CORDEN 79	OMEG	$12\text{--}15 \pi^- p \rightarrow \pi^+ \pi^- n$
92^{+39}_{-22}	²⁰ POLYCHRO... 79	STRC	$7 \pi^- p \rightarrow n K_S^0 K_S^0$

PRODUCED BY K^\pm BEAM

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$88.5^{+2.5}_{-2.2}$		OUR AVERAGE Includes data from the datablock that follows this one. Error includes scale factor of 1.4. See the ideogram below.		
90 ±12		ASTON	88D LASS	11 $K^- p \rightarrow K_S^0 K_S^0 \Lambda$
73 ±18		BOLONKIN	86 SPEC	40 $K^- p \rightarrow K_S^0 K_S^0 \Upsilon$
83 ±15		ARMSTRONG	83B OMEG	18.5 $K^- p \rightarrow K^- K^+ \Lambda$
85 ±16	650	AGUILAR-...	81B HBC	4.2 $K^- p \rightarrow \Lambda K^+ K^-$
80 $^{+14}_{-11}$	572	ALHARRAN	81 HBC	8.25 $K^- p \rightarrow \Lambda K \bar{K}$
72 ±25	166	EVANGELIS...	77 OMEG	10 $K^- p \rightarrow K^+ K^- (\Lambda, \Sigma)$
69 ±22	100	AGUILAR-...	72B HBC	3.9,4.6 $K^- p \rightarrow K \bar{K} (\Lambda, \Sigma)$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
92 $^{+25}_{-16}$	61	BINON	07 GAMS	32.5 $K^- p \rightarrow \eta \eta (\Lambda / \Sigma^0)$
75 ±20	21	BARKOV	99 SPEC	40 $K^- p \rightarrow K_S^0 K_S^0 \gamma$
62 $^{+19}_{-14}$	123	BARREIRO	77 HBC	4.15 $K^- p \rightarrow \Lambda K_S^0 K_S^0$
61 ± 8	120	BRANDENB...	76c ASPK	13 $K^- p \rightarrow K^+ K^- (\Lambda, \Sigma)$

WEIGHTED AVERAGE
88.5+2.5-2.2 (Error scaled by 1.4)



PRODUCED IN e^+e^- ANNIHILATION AND PARTICLE DECAYS

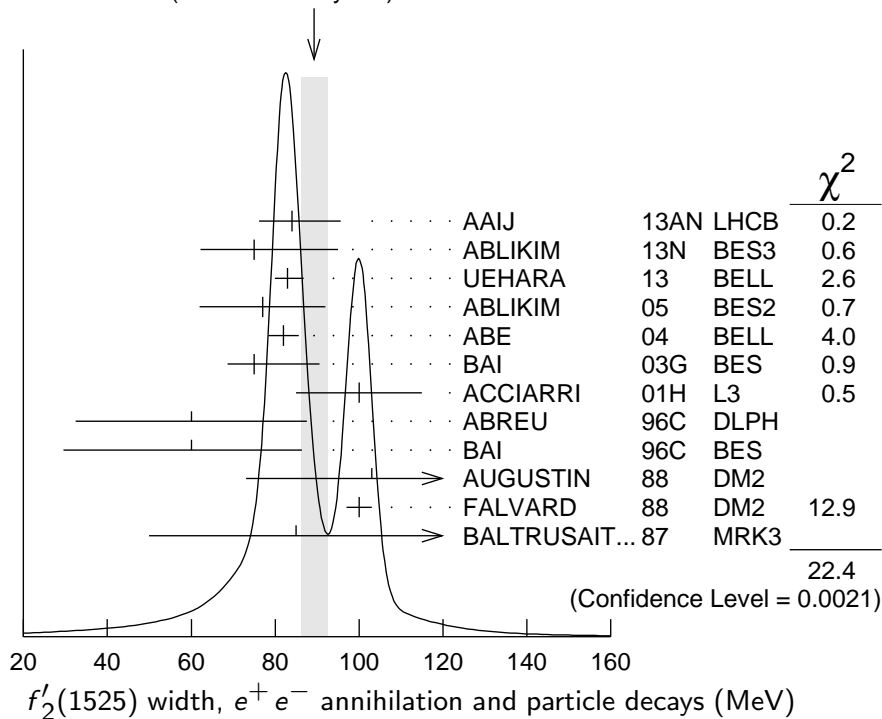
VALUE (MeV) EVTS DOCUMENT ID TECN COMMENT

The data in this block is included in the average printed for a previous datablock.

89.2^{+3.4}_{-3.0} OUR AVERAGE Error includes scale factor of 1.8. See the ideogram below.

84 ± 6	⁺¹⁰ ₋₅		AAIJ	13AN	LHCB	$\bar{B}_s^0 \rightarrow J/\psi K^+ K^-$
75	⁺¹² ₋₁₀	⁺¹⁶ ₋₈	5.5k 22	ABLIKIM	13N	BES3 $e^+e^- \rightarrow J/\psi \rightarrow \gamma\eta\eta$
82.9	^{+2.1} _{-2.2}	^{+3.3} _{-2.0}		UEHARA	13	BELL $\gamma\gamma \rightarrow K_S^0 K_S^0$
77 ± 15				ABLIKIM	05	BES2 $J/\psi \rightarrow \phi K^+ K^-$
82 ± 2	± 3			ABE	04	BELL $10.6 e^+e^- \rightarrow e^+e^- K^+ K^-$
75 ± 4	⁺¹⁵ ₋₅			BAI	03G	BES $J/\psi \rightarrow \gamma K \bar{K}$
100 ± 15		331	23	ACCIARRI	01H	L3 $91, 183-209 e^+e^- \rightarrow e^+e^- K_S^0 K_S^0$
60 ± 20	± 19			ABREU	96C	DLPH $Z^0 \rightarrow K^+ K^- + X$
60 ± 23	⁺¹³ ₋₂₀			BAI	96C	BES $J/\psi \rightarrow \gamma K^+ K^-$
103 ± 30				AUGUSTIN	88	DM2 $J/\psi \rightarrow \gamma K^+ K^-$
100 ± 3			24	FALVARD	88	DM2 $J/\psi \rightarrow \phi K^+ K^-$
85 ± 35				BALTRUSAIT...87	MRK3	$J/\psi \rightarrow \gamma K^+ K^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●						
37 ± 12		29	25	LEES	14H	BABR $e^+e^- \rightarrow K_S^0 K_S^0 K^+ K^- \gamma$
104 ± 10		870	26	SCHEGELSKY	06A	RVUE $\gamma\gamma \rightarrow K_S^0 K_S^0$
62 ± 10			27	FALVARD	88	DM2 $J/\psi \rightarrow \phi K^+ K^-$

WEIGHTED AVERAGE
89.2+3.4-3.0 (Error scaled by 1.8)



PRODUCED IN $\bar{p}p$ ANNIHILATION

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
77 ± 5	OUR AVERAGE		
76 ± 6	AMSLER	06	CBAR $0.9 \bar{p}p \rightarrow K^+ K^- \pi^0$
79 ± 8	²⁸ AMSLER	02	CBAR $0.9 \bar{p}p \rightarrow \pi^0 \eta \eta, \pi^0 \pi^0 \pi^0$
128 ± 20	²⁹ ANISOVICH	09	RVUE $0.0 \bar{p}p, \pi N$

• • • We do not use the following data for averages, fits, limits, etc. • • •

CENTRAL PRODUCTION

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
70 ± 25	BARBERIS	99	OMEG 450 $pp \rightarrow p_s p_f K^+ K^-$

PRODUCED IN $e p$ COLLISIONS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$83 \pm 9^{+5}_{-4}$		³⁰ CHEKANOV	08	ZEUS $e p \rightarrow K_S^0 K_S^0 X$

• • • We do not use the following data for averages, fits, limits, etc. • • •

50^{+34}_{-22}	84	³¹ CHEKANOV	04	ZEUS $e p \rightarrow K_S^0 K_S^0 X$
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¹⁷ From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

¹⁸ CHABAUD 81 is a reanalysis of PAWLICKI 77 data.

¹⁹ From an amplitude analysis where the $f_2'(1525)$ width and elasticity are in complete disagreement with the values obtained from $K\bar{K}$ channel, making the solution dubious.

²⁰ From a fit to the D with $f_2(1270)$ - $f_2'(1525)$ interference. Mass fixed at 1516 MeV.

²¹ Systematic errors not estimated.

²² From partial wave analysis including all possible combinations of 0^{++} , 2^{++} , and 4^{++} resonances.

²³ Supersedes ACCIARRI 95J.

²⁴ From an analysis including interference with $f_0(1710)$.

²⁵ From a fit to a Breit-Wigner line shape plus a second-order polynomial function. Systematic errors not evaluated.

²⁶ From analysis of L3 data at 91 and 183–209 GeV.

²⁷ From an analysis ignoring interference with $f_0(1710)$.

²⁸ T-matrix pole.

²⁹ 4-poles, 5-channel K matrix fit.

³⁰ In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a_2^0(1320)$, and $f_2'(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background.

³¹ Systematic errors not estimated.

$f_2'(1525)$ DECAY MODES

Mode	Fraction (Γ_j/Γ)
Γ_1 $K\bar{K}$	$(88.7 \pm 2.2) \%$
Γ_2 $\eta\eta$	$(10.4 \pm 2.2) \%$
Γ_3 $\pi\pi$	$(8.2 \pm 1.5) \times 10^{-3}$
Γ_4 $K\bar{K}^*(892) + \text{c.c.}$	
Γ_5 $\pi K\bar{K}$	
Γ_6 $\pi\pi\eta$	
Γ_7 $\pi^+\pi^+\pi^-\pi^-$	
Γ_8 $\gamma\gamma$	$(1.10 \pm 0.14) \times 10^{-6}$

CONSTRAINED FIT INFORMATION

An overall fit to the total width, 2 partial widths, a combination of partial widths obtained from integrated cross sections, and 3 branching ratios uses 17 measurements and one constraint to determine 5 parameters. The overall fit has a $\chi^2 = 14.3$ for 13 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\langle \delta p_i \delta p_j \rangle / (\delta p_i \cdot \delta p_j)$, in percent, from the fit to parameters p_i , including the branching fractions, $x_i \equiv \Gamma_i / \Gamma_{\text{total}}$. The fit constrains the x_i whose labels appear in this array to sum to one.

x_2	-100			
x_3	-6	-1		
x_8	-6	6	1	
Γ	-23	23	-1	-56
	x_1	x_2	x_3	x_8

Mode	Rate (MeV)
Γ_1 $K\bar{K}$	65 $^{+5}_{-4}$
Γ_2 $\eta\eta$	7.6 ± 1.8
Γ_3 $\pi\pi$	0.60 ± 0.12
Γ_8 $\gamma\gamma$	(8.1 ± 0.9) $\times 10^{-5}$

$f'_2(1525)$ PARTIAL WIDTHS

$\Gamma(K\bar{K})$	Γ_1		
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT

65 $^{+5}_{-4}$ OUR FIT

63 $^{+6}_{-5}$ ³² LONGACRE 86 MPS 22 $\pi^- p \rightarrow K_S^0 K_S^0 n$

$\Gamma(\eta\eta)$	Γ_2			
VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT

7.6 ± 1.8 OUR FIT

• • • We do not use the following data for averages, fits, limits, etc. • • •

5.0 ± 0.8 870 ³³ SCHEGELSKY 06A RVUE $\gamma\gamma \rightarrow K_S^0 K_S^0$

24 $^{+3}_{-1}$ ³² LONGACRE 86 MPS 22 $\pi^- p \rightarrow K_S^0 K_S^0 n$

$\Gamma(\pi\pi)$ Γ_3

VALUE (MeV)	EVTs	DOCUMENT ID	TECN	COMMENT
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0.60 ± 0.12 OUR FIT
1.4 ^{+1.0}/_{-0.5} ³² LONGACRE 86 MPS $22 \pi^- p \rightarrow K_S^0 K_S^0 n$

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.2 ^{+1.0}/_{-0.2} 870 ³³ SCHEGELSKY 06A RVUE $\gamma\gamma \rightarrow K_S^0 K_S^0$

$\Gamma(\gamma\gamma)$ Γ_8

VALUE (keV)	EVTs	DOCUMENT ID	TECN	COMMENT
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0.081 ± 0.009 OUR FIT
 • • • We do not use the following data for averages, fits, limits, etc. • • •
 0.13 ± 0.03 870 ³³ SCHEGELSKY 06A RVUE $\gamma\gamma \rightarrow K_S^0 K_S^0$

³² From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

³³ From analysis of L3 data at 91 and 183–209 GeV, using $\Gamma(f_2'(1525) \rightarrow K\bar{K}) = 68$ MeV and SU(3) relations.

$f_2'(1525) \Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(K\bar{K}) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_1\Gamma_8/\Gamma$

VALUE (keV)	EVTs	DOCUMENT ID	TECN	COMMENT
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0.072 ± 0.007 OUR FIT
0.072 ± 0.007 OUR AVERAGE

0.048 ^{+0.067}/_{-0.008} ^{+0.108}/_{-0.012} UEHARA 13 BELL $\gamma\gamma \rightarrow K_S^0 K_S^0$

0.0564 ± 0.0048 ± 0.0116 ABE 04 BELL $10.6 e^+ e^- \rightarrow e^+ e^- K^+ K^-$

0.076 ± 0.006 ± 0.011 ³³¹ ³⁴ ACCIARRI 01H L3 $e^+ e^- \rightarrow e^+ e^- K_S^0 K_S^0$

0.067 ± 0.008 ± 0.015 ³⁵ ALBRECHT 90G ARG $e^+ e^- \rightarrow e^+ e^- K^+ K^-$

0.11 ^{+0.03}/_{-0.02} ± 0.02 BEHREND 89C CELL $e^+ e^- \rightarrow e^+ e^- K_S^0 K_S^0$

0.10 ^{+0.04}/_{-0.03} ^{+0.03}/_{-0.02} BERGER 88 PLUT $e^+ e^- \rightarrow e^+ e^- K_S^0 K_S^0$

0.12 ± 0.07 ± 0.04 ³⁵ AIHARA 86B TPC $e^+ e^- \rightarrow e^+ e^- K^+ K^-$

0.11 ± 0.02 ± 0.04 ³⁵ ALTHOFF 83 TASS $e^+ e^- \rightarrow e^+ e^- K\bar{K}$

• • • We do not use the following data for averages, fits, limits, etc. • • •
 0.0314 ± 0.0050 ± 0.0077 ³⁶ ALBRECHT 90G ARG $e^+ e^- \rightarrow e^+ e^- K^+ K^-$

³⁴ Supersedes ACCIARRI 95J. From analysis of L3 data at 91 and 183–209 GeV,
³⁵ Using an incoherent background.
³⁶ Using a coherent background.

$f_2'(1525)$ BRANCHING RATIOS

$\Gamma(\eta\eta)/\Gamma_{\text{total}}$ Γ_2/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •
 seen UEHARA 10A BELL $10.6 e^+ e^- \rightarrow e^+ e^- \eta\eta$

0.10 ± 0.03 ³⁷ PROKOSHKIN 91 GAM4 $300 \pi^- p \rightarrow \pi^- p \eta\eta$

³⁷ Combining results of GAM4 with those of WA76 on $K\bar{K}$ central production and results of CBAL, MRK3 and DM2 on $J/\psi \rightarrow \gamma\eta\eta$.

$\Gamma(\eta\eta)/\Gamma(K\bar{K})$ Γ_2/Γ_1

VALUE CL% EVTS DOCUMENT ID TECN COMMENT

0.118±0.028 OUR FIT

0.115±0.028 OUR AVERAGE

0.119±0.015±0.036 61 ³⁸ BINON 07 GAMS 32.5 $K^- p \rightarrow \eta\eta(\Lambda/\Sigma^0)$

0.11 ±0.04 ³⁹ PROKOSHKIN 91 GAM4 300 $\pi^- p \rightarrow \pi^- p\eta\eta$

• • • We do not use the following data for averages, fits, limits, etc. • • •

< 0.14 90 BARBERIS 00E 450 $pp \rightarrow p_f\eta\eta p_S$

< 0.50 BARNES 67 HBC 4.6,5.0 $K^- p$

³⁸ Using the compilation of the cross sections for $f'_2(1525)$ production in $K^- p$ collisions from ASTON 88D.

³⁹ Combining results of GAM4 with those of WA76 on $K\bar{K}$ central production and results of CBAL, MRK3 and DM2 on $J/\psi \rightarrow \gamma\eta\eta$.

$\Gamma(\pi\pi)/\Gamma_{\text{total}}$ Γ_3/Γ

VALUE CL% DOCUMENT ID TECN COMMENT

0.0082±0.0016 OUR FIT

0.0075±0.0016 OUR AVERAGE

0.007 ±0.002 COSTA 80 OMEG 10 $\pi^- p \rightarrow K^+ K^- n$

0.027 $\begin{smallmatrix} +0.071 \\ -0.013 \end{smallmatrix}$ ⁴⁰ GORLICH 80 ASPK 17,18 $\pi^- p$

0.0075±0.0025 ^{40,41} MARTIN 79 RVUE

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.06 95 AGUILAR-... 81B HBC 4.2 $K^- p \rightarrow \Lambda K^+ K^-$

0.19 ±0.03 CORDEN 79 OMEG 12-15 $\pi^- p \rightarrow \pi^+ \pi^- n$

<0.045 95 BARREIRO 77 HBC 4.15 $K^- p \rightarrow \Lambda K_S^0 K_S^0$

0.012 ±0.004 ⁴⁰ PAWLICKI 77 SPEC 6 $\pi N \rightarrow K^+ K^- N$

<0.063 90 BRANDENB... 76C ASPK 13 $K^- p \rightarrow K^+ K^- (\Lambda, \Sigma)$

<0.0086 ⁴⁰ BEUSCH 75B OSPK 8.9 $\pi^- p \rightarrow K^0 \bar{K}^0 n$

⁴⁰ Assuming that the $f'_2(1525)$ is produced by an one-pion exchange production mechanism.

⁴¹ MARTIN 79 uses the PAWLICKI 77 data with different input value of the $f'_2(1525) \rightarrow K\bar{K}$ branching ratio.

$\Gamma(\pi\pi)/\Gamma(K\bar{K})$ Γ_3/Γ_1

VALUE DOCUMENT ID TECN COMMENT

0.0092±0.0018 OUR FIT

0.075 ±0.035

AUGUSTIN 87 DM2 $J/\psi \rightarrow \gamma\pi^+\pi^-$

$[\Gamma(K\bar{K}^*(892) + \text{c.c.}) + \Gamma(\pi K\bar{K})]/\Gamma(K\bar{K})$ $(\Gamma_4+\Gamma_5)/\Gamma_1$

VALUE CL% DOCUMENT ID TECN COMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.35 95 AGUILAR-... 72B HBC 3.9,4.6 $K^- p$

<0.4 67 AMMAR 67 HBC

$\Gamma(\pi\pi\eta)/\Gamma(K\bar{K})$ Γ_6/Γ_1

VALUE CL% DOCUMENT ID TECN COMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.41 95 AGUILAR-... 72B HBC 3.9,4.6 $K^- p$

<0.3 67 AMMAR 67 HBC

$$\Gamma(\pi^+\pi^+\pi^-\pi^-)/\Gamma(K\bar{K})$$

$$\Gamma_7/\Gamma_1$$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<0.32	95	AGUILAR-...	72B HBC	3.9,4.6 $K^- p$

$f_2'(1525)$ REFERENCES

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LEES	14H	PR D89 092002	J.P. Lees <i>et al.</i>	(BABAR Collab.)
AAIJ	13AN	PR D87 072004	R. Aaij <i>et al.</i>	(LHCb Collab.)
ABLIKIM	13N	PR D87 092009	Ablikim M. <i>et al.</i>	(BES III Collab.)
UEHARA	13	PTEP 2013 123C01	S. Uehara <i>et al.</i>	(BELLE Collab.)
UEHARA	10A	PR D82 114031	S. Uehara <i>et al.</i>	(BELLE Collab.)
ANISOVICH	09	IJMP A24 2481	V.V. Anisovich, A.V. Sarantsev	
CHEKANOV	08	PRL 101 112003	S. Chekanov <i>et al.</i>	(ZEUS Collab.)
BINON	07	PAN 70 1713	F. Binon <i>et al.</i>	(GAMS Collab.)
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AMSLER	06	PL B639 165	C. Amsler <i>et al.</i>	(CBAR Collab.)
SCHEGELSKY	06A	EPJ A27 207	V.A. Schegelsky <i>et al.</i>	
ABLIKIM	05	PL B607 243	M. Ablikim <i>et al.</i>	(BES Collab.)
ABE	04	EPJ C32 323	K. Abe <i>et al.</i>	(BELLE Collab.)
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BAI	03G	PR D68 052003	J.Z. Bai <i>et al.</i>	(BES Collab.)
TIKHOMIROV	03	PAN 66 828	G.D. Tikhomirov <i>et al.</i>	
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AMSLER	02	EPJ C23 29	C. Amsler <i>et al.</i>	
ACCIARRI	01H	PL B501 173	M. Acciarri <i>et al.</i>	(L3 Collab.)
BARBERIS	00E	PL B479 59	D. Barberis <i>et al.</i>	(WA 102 Collab.)
BARBERIS	99	PL B453 305	D. Barberis <i>et al.</i>	(Omega Expt.)
BARKOV	99	JETPL 70 248	B.P. Barkov <i>et al.</i>	
		Translated from ZETFP 70 242.		
ABREU	96C	PL B379 309	P. Abreu <i>et al.</i>	(DELPHI Collab.)
BAI	96C	PRL 77 3959	J.Z. Bai <i>et al.</i>	(BES Collab.)
ACCIARRI	95J	PL B363 118	M. Acciarri <i>et al.</i>	(L3 Collab.)
PROKOSHKIN	91	SPD 36 155	Y.D. Prokoshkin	(GAM2, GAM4 Collab.)
		Translated from DANS 316 900.		
ALBRECHT	90G	ZPHY C48 183	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
PDG	90	PL B239 1	J.J. Hernandez <i>et al.</i>	(IFIC, BOST, CIT+)
BEHREND	89C	ZPHY C43 91	H.J. Behrend <i>et al.</i>	(CELLO Collab.)
ASTON	88D	NP B301 525	D. Aston <i>et al.</i>	(SLAC, NAGO, CINC, INUS)
AUGUSTIN	88	PRL 60 2238	J.E. Augustin <i>et al.</i>	(DM2 Collab.)
BERGER	88	ZPHY C37 329	C. Berger <i>et al.</i>	(PLUTO Collab.)
FALVARD	88	PR D38 2706	A. Falvard <i>et al.</i>	(CLER, FRAS, LALO+)
AUGUSTIN	87	ZPHY C36 369	J.E. Augustin <i>et al.</i>	(LALO, CLER, FRAS+)
BALTRUSAIT...	87	PR D35 2077	R.M. Baltrusaitis <i>et al.</i>	(Mark III Collab.)
AIHARA	86B	PRL 57 404	H. Aihara <i>et al.</i>	(TPC-2 γ Collab.)
BOLONKIN	86	SJNP 43 776	B.V. Bolonkin <i>et al.</i>	(ITEP) JP
		Translated from YAF 43 1211.		
LONGACRE	86	PL B177 223	R.S. Longacre <i>et al.</i>	(BNL, BRAN, CUNY+)
ALTHOFF	83	PL 121B 216	M. Althoff <i>et al.</i>	(TASSO Collab.)
ARMSTRONG	83B	NP B224 193	T.A. Armstrong <i>et al.</i>	(BARI, BIRM, CERN+)
AGUILAR-...	81B	ZPHY C8 313	M. Aguilar-Benitez <i>et al.</i>	(CERN, CDEF+)
ALHARRAN	81	NP B191 26	S. Al-Harran <i>et al.</i>	(BIRM, CERN, GLAS+)
CHABAUD	81	APP B12 575	V. Chabaud <i>et al.</i>	(CERN, CRAC, MPIM)
COSTA	80	NP B175 402	G. Costa <i>et al.</i>	(BARI, BONN, CERN, GLAS+)
GORLICH	80	NP B174 16	L. Gorlich <i>et al.</i>	(CRAC, MPIM, CERN+)
CORDEN	79	NP B157 250	M.J. Corden <i>et al.</i>	(BIRM, RHEL, TELA+) JP
MARTIN	79	NP B158 520	A.D. Martin, E.N. Ozmutlu	(DURH)
POLYCHRO...	79	PR D19 1317	V.A. Polychronakos <i>et al.</i>	(NDAM, ANL)
BARREIRO	77	NP B121 237	F. Barreiro <i>et al.</i>	(CERN, AMST, NIJM+)
EVANGELIS...	77	NP B127 384	C. Evangelista <i>et al.</i>	(BARI, BONN, CERN+)
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BRANDENB...	76C	NP B104 413	G.W. Brandenburg <i>et al.</i>	(SLAC)
BEUSCH	75B	PL 60B 101	W. Beusch <i>et al.</i>	(CERN, ETH)
AGUILAR-...	72B	PR D6 29	M. Aguilar-Benitez <i>et al.</i>	(BNL)
AMMAR	67	PRL 19 1071	R. Ammar <i>et al.</i>	(NWES, ANL) JP
BARNES	67	PRL 19 964	V.E. Barnes <i>et al.</i>	(BNL, SYRA) IJPC
CRENNELL	66	PRL 16 1025	D.J. Crennell <i>et al.</i>	(BNL) I