

$f'_2(1525)$ 

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

## $f'_2(1525)$ 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 <sup>+10</sup> <sub>-2</sub>		<sup>1</sup> LONGACRE 86	MPS	22	$\pi^- p \rightarrow K_S^0 K_S^0 n$
1496 <sup>+9</sup> <sub>-8</sub>		<sup>2</sup> CHABAUD 81	ASPK	6	$\pi^- p \rightarrow K^+ K^- n$
1497 <sup>+8</sup> <sub>-9</sub>		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		<sup>3</sup> 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**1523.6 ± 1.1 OUR AVERAGE** Includes data from the datablock that follows this one. Error includes scale factor of 1.1.

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		<sup>4</sup> BARKOV 99	SPEC	40	$K^- p \rightarrow K_S^0 K_S^0 y$

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

VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT

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

### 1522.4<sup>+1.7</sup><sub>-1.4</sub> OUR AVERAGE

1522.2 ± 2.8 <sup>+5.3</sup> <sub>-2.0</sub>		AAIJ 13AN	LHCB	$\bar{B}_s^0 \rightarrow J/\psi K^+ K^-$
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$1525.3^{+1.2+3.7}_{-1.4-2.1}$		UEHARA	13	BELL	$\gamma\gamma \rightarrow K_S^0 K_S^0$
$1521 \pm 5$		ABLIKIM	05	BES2	$J/\psi \rightarrow \phi K^+ K^-$
$1518 \pm 1 \pm 3$		ABE	04	BELL	$10.6 e^+ e^- \rightarrow e^+ e^- K^+ K^-$
$1519 \pm 2 \begin{smallmatrix} +15 \\ -5 \end{smallmatrix}$		BAI	03G	BES	$J/\psi \rightarrow \gamma K \bar{K}$
$1523 \pm 6$	331	<sup>5</sup> ACCIARRI	01H	L3	$91, 183\text{--}209 e^+ e^- \rightarrow e^+ e^- K_S^0 K_S^0$
$1535 \pm 5 \pm 4$		ABREU	96C	DLPH	$Z^0 \rightarrow K^+ K^- + X$
$1516 \pm 5 \begin{smallmatrix} +9 \\ -15 \end{smallmatrix}$		BAI	96C	BES	$J/\psi \rightarrow \gamma K^+ K^-$
$1531.6 \pm 10.0$		AUGUSTIN	88	DM2	$J/\psi \rightarrow \gamma K^+ K^-$
$1515 \pm 5$		<sup>6</sup> FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$
$1525 \pm 10 \pm 10$		BALTRUSAIT..	87	MRK3	$J/\psi \rightarrow \gamma K^+ K^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
$1523 \pm 5$	870	<sup>7</sup> SCHEGELSKY	06A	RVUE	$\gamma\gamma \rightarrow K_S^0 K_S^0$
$1496 \pm 2$		<sup>8</sup> FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$

### PRODUCED IN $\bar{p}p$ ANNIHILATION

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
$1530 \pm 12$	<sup>9</sup> ANISOVICH	09	RVUE $0.0 \bar{p}p, \pi N$
$1513 \pm 4$	AMSLER	06	CBAR $0.9 \bar{p}p \rightarrow K^+ K^- \pi^0$
$1508 \pm 9$	<sup>10</sup> AMSLER	02	CBAR $0.9 \bar{p}p \rightarrow \pi^0 \eta \eta, \pi^0 \pi^0 \pi^0$

### CENTRAL PRODUCTION

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>1515 \pm 15</math></b>	BARBERIS	99	OMEG $450 pp \rightarrow p_s p_f K^+ K^-$

### PRODUCED IN $ep$ COLLISIONS

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>1512 \pm 3 \begin{smallmatrix} +1.4 \\ -0.5 \end{smallmatrix}</math></b>		<sup>11</sup> CHEKANOV	08	ZEUS $ep \rightarrow K_S^0 K_S^0 X$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$1537 \begin{smallmatrix} +9 \\ -8 \end{smallmatrix}$	84	<sup>12</sup> CHEKANOV	04	ZEUS $ep \rightarrow K_S^0 K_S^0 X$

<sup>1</sup> From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

<sup>2</sup> CHABAUD 81 is a reanalysis of PAWLICKI 77 data.

<sup>3</sup> 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.

<sup>4</sup> Systematic errors not estimated.

<sup>5</sup> Supersedes ACCIARRI 95J.

<sup>6</sup> From an analysis ignoring interference with  $f_0(1710)$ .

<sup>7</sup> From analysis of L3 data at 91 and 183–209 GeV.

<sup>8</sup> From an analysis including interference with  $f_0(1710)$ .

<sup>9</sup> 4-poles, 5-channel K matrix fit.

<sup>10</sup> T-matrix pole.

<sup>11</sup> 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.

<sup>12</sup> Systematic errors not estimated.

## $f'_2(1525)$ WIDTH

VALUE (MeV)	DOCUMENT ID	COMMENT
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**$73^{+6}_{-5}$  OUR FIT**

<b><math>76 \pm 10</math></b>	PDG	90	For fitting
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### PRODUCED BY PION BEAM

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

102 ± 42	TIKHOMIROV 03	SPEC	40.0 $\pi^- C \rightarrow K_S^0 K_S^0 K_L^0 X$
108 <sup>+</sup> <sub>-2</sub> <sup>5</sup>	<sup>13</sup> LONGACRE 86	MPS	22 $\pi^- p \rightarrow K_S^0 K_S^0 n$
69 <sup>+</sup> <sub>-16</sub> <sup>22</sup>	<sup>14</sup> CHABAUD 81	ASPK	6 $\pi^- p \rightarrow K^+ K^- n$
137 <sup>+</sup> <sub>-21</sub> <sup>23</sup>	CHABAUD 81	ASPK	18.4 $\pi^- p \rightarrow K^+ K^- n$
150 <sup>+</sup> <sub>-50</sub> <sup>83</sup>	GORLICH 80	ASPK	17 $\pi^- p$ polarized $\rightarrow K^+ K^- n$
165 ± 42	<sup>15</sup> CORDEN 79	OMEG	12–15 $\pi^- p \rightarrow \pi^+ \pi^- n$
92 <sup>+</sup> <sub>-22</sub> <sup>39</sup>	<sup>16</sup> 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
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**$81.5^{+2.2}_{-1.9}$  OUR AVERAGE** Includes data from the datablock that follows this one.

90 ± 12	ASTON	88D	LASS	11 $K^- p \rightarrow K_S^0 K_S^0 \Lambda$
73 ± 18	BOLONKIN 86	SPEC	40 $K^- p \rightarrow K_S^0 K_S^0 Y$	
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 <sup>+</sup> <sub>-11</sub> <sup>14</sup>	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 <sup>+</sup> <sub>-16</sub> <sup>25</sup>	61 BINON	07	GAMS	32.5 $K^- p \rightarrow \eta \eta (\Lambda / \Sigma^0)$
75 ± 20	<sup>17</sup> BARKOV 99	SPEC	40 $K^- p \rightarrow K_S^0 K_S^0 y$	
62 <sup>+</sup> <sub>-14</sub> <sup>19</sup>	123 BARREIRO 77	HBC	4.15 $K^- p \rightarrow \Lambda K_S^0 K_S^0$	
61 ± 8	120 BRANDENB...	76C	ASPK	13 $K^- p \rightarrow K^+ K^- (\Lambda, \Sigma)$

### 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.

**$81.5^{+2.4}_{-2.0}$  OUR AVERAGE**

84 ± 6 <sup>+</sup> <sub>-5</sub> <sup>10</sup>	AAIJ	13AN	LHCB	$\bar{B}_s^0 \rightarrow J/\psi K^+ K^-$
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$82.9^{+2.1+3.3}_{-2.2-2.0}$		UEHARA	13	BELL	$\gamma\gamma \rightarrow K_S^0 K_S^0$
$77 \pm 15$		ABLIKIM	05	BES2	$J/\psi \rightarrow \phi K^+ K^-$
$82 \pm 2 \pm 3$		ABE	04	BELL	$10.6 e^+ e^- \rightarrow e^+ e^- K^+ K^-$
$75 \pm 4 \quad ^{+15}_{-5}$		BAI	03G	BES	$J/\psi \rightarrow \gamma K \bar{K}$
$100 \pm 15$	331	<sup>18</sup> ACCIARRI	01H	L3	$91, 183\text{--}209 e^+ e^- \rightarrow e^+ e^- K_S^0 K_S^0$
$60 \pm 20 \pm 19$		ABREU	96C	DLPH	$Z^0 \rightarrow K^+ K^- + X$
$60 \pm 23 \quad ^{+13}_{-20}$		BAI	96C	BES	$J/\psi \rightarrow \gamma K^+ K^-$
$103 \pm 30$		AUGUSTIN	88	DM2	$J/\psi \rightarrow \gamma K^+ K^-$
$62 \pm 10$		<sup>19</sup> FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$
$85 \pm 35$		BALTRUSAIT..	87	MRK3	$J/\psi \rightarrow \gamma K^+ K^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
$104 \pm 10$	870	<sup>20</sup> SCHEGELSKY	06A	RVUE	$\gamma\gamma \rightarrow K_S^0 K_S^0$
$100 \pm 3$		<sup>21</sup> FALVARD	88	DM2	$J/\psi \rightarrow \phi K^+ K^-$

### PRODUCED IN $\bar{p}p$ ANNIHILATION

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>79 \pm 8</math></b>	<sup>22</sup> 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. ● ● ●			
$128 \pm 20$	<sup>23</sup> ANISOVICH	09	RVUE $0.0 \bar{p}p, \pi N$
$76 \pm 6$	AMSLER	06	CBAR $0.9 \bar{p}p \rightarrow K^+ K^- \pi^0$

### CENTRAL PRODUCTION

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>70 \pm 25</math></b>	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>
<b><math>83 \pm 9 \quad ^{+5}_{-4}</math></b>		<sup>24</sup> 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. ● ● ●				
$50 \quad ^{+34}_{-22}$	84	<sup>25</sup> CHEKANOV	04	ZEUS $e p \rightarrow K_S^0 K_S^0 X$

<sup>13</sup> From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

<sup>14</sup> CHABAUD 81 is a reanalysis of PAWLICKI 77 data.

<sup>15</sup> 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.

<sup>16</sup> From a fit to the  $D$  with  $f_2(1270)$ - $f_2'(1525)$  interference. Mass fixed at 1516 MeV.

<sup>17</sup> Systematic errors not estimated.

<sup>18</sup> Supersedes ACCIARRI 95J.

<sup>19</sup> From an analysis ignoring interference with  $f_0(1710)$ .

<sup>20</sup> From analysis of L3 data at 91 and 183–209 GeV.

<sup>21</sup> From an analysis including interference with  $f_0(1710)$ .

<sup>22</sup> T-matrix pole.

<sup>23</sup> 4-poles, 5-channel K matrix fit.

<sup>24</sup>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.  
<sup>25</sup>Systematic errors not estimated.

### $f_2'(1525)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $K\bar{K}$	(88.7 $\pm$ 2.2 ) %
$\Gamma_2$ $\eta\eta$	(10.4 $\pm$ 2.2 ) %
$\Gamma_3$ $\pi\pi$	( 8.2 $\pm$ 1.5 ) $\times 10^{-3}$
$\Gamma_4$ $K\bar{K}^*(892) + \text{c.c.}$	
$\Gamma_5$ $\pi K\bar{K}$	
$\Gamma_6$ $\pi\pi\eta$	
$\Gamma_7$ $\pi^+\pi^+\pi^-\pi^-$	
$\Gamma_8$ $\gamma\gamma$	( 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	
$\Gamma$	-23	23	-1	-56
	$x_1$	$x_2$	$x_3$	$x_8$

Mode	Rate (MeV)
$\Gamma_1$ $K\bar{K}$	65 $\begin{matrix} +5 \\ -4 \end{matrix}$
$\Gamma_2$ $\eta\eta$	7.6 $\pm$ 1.8
$\Gamma_3$ $\pi\pi$	0.60 $\pm$ 0.12
$\Gamma_8$ $\gamma\gamma$	( 8.1 $\pm$ 0.9 ) $\times 10^{-5}$

## $f'_2(1525)$ PARTIAL WIDTHS

$\Gamma(K\bar{K})$   $\Gamma_1$   
VALUE (MeV)      DOCUMENT ID    TECN    COMMENT

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

**$63^{+6}_{-5}$**       <sup>26</sup> LONGACRE    86    MPS     $22 \pi^- p \rightarrow K_S^0 K_S^0 n$

$\Gamma(\eta\eta)$   $\Gamma_2$   
VALUE (MeV)    EVTS      DOCUMENT ID    TECN    COMMENT

**$7.6 \pm 1.8$  OUR FIT**

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

$5.0 \pm 0.8$       870      <sup>27</sup> SCHEGELSKY 06A    RVUE     $\gamma\gamma \rightarrow K_S^0 K_S^0$

$24^{+3}_{-1}$       <sup>26</sup> LONGACRE    86    MPS     $22 \pi^- p \rightarrow K_S^0 K_S^0 n$

$\Gamma(\pi\pi)$   $\Gamma_3$   
VALUE (MeV)    EVTS      DOCUMENT ID    TECN    COMMENT

**$0.60 \pm 0.12$  OUR FIT**

**$1.4^{+1.0}_{-0.5}$**       <sup>26</sup> 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      <sup>27</sup> SCHEGELSKY 06A    RVUE     $\gamma\gamma \rightarrow K_S^0 K_S^0$

$\Gamma(\gamma\gamma)$   $\Gamma_8$   
VALUE (keV)    EVTS      DOCUMENT ID    TECN    COMMENT

**$0.081 \pm 0.009$  OUR FIT**

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

$0.13 \pm 0.03$       870      <sup>27</sup> SCHEGELSKY 06A    RVUE     $\gamma\gamma \rightarrow K_S^0 K_S^0$

<sup>26</sup> From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

<sup>27</sup> 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

**$0.072 \pm 0.007$  OUR FIT**

**$0.072 \pm 0.007$  OUR AVERAGE**

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

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

$0.076 \pm 0.006 \pm 0.011$     331    <sup>28</sup> ACCIARRI    01H    L3     $e^+ e^- \rightarrow e^+ e^- K_S^0 K_S^0$

$0.067 \pm 0.008 \pm 0.015$     <sup>29</sup> ALBRECHT    90G    ARG     $e^+ e^- \rightarrow e^+ e^- K^+ K^-$

0.11	$\begin{matrix} +0.03 \\ -0.02 \end{matrix}$	$\pm 0.02$	BEHREND	89C	CELL	$e^+e^- \rightarrow e^+e^- K_S^0 K_S^0$
0.10	$\begin{matrix} +0.04 \\ -0.03 \end{matrix}$	$\begin{matrix} +0.03 \\ -0.02 \end{matrix}$	BERGER	88	PLUT	$e^+e^- \rightarrow e^+e^- K_S^0 K_S^0$
0.12	$\pm 0.07$	$\pm 0.04$	<sup>29</sup> AIHARA	86B	TPC	$e^+e^- \rightarrow e^+e^- K^+ K^-$
0.11	$\pm 0.02$	$\pm 0.04$	<sup>29</sup> ALTHOFF	83	TASS	$e^+e^- \rightarrow e^+e^- K\bar{K}$

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

$0.0314 \pm 0.0050 \pm 0.0077$	<sup>30</sup> ALBRECHT	90G	ARG	$e^+e^- \rightarrow e^+e^- K^+ K^-$
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<sup>28</sup> Supersedes ACCIARRI 95J. From analysis of L3 data at 91 and 183–209 GeV,

<sup>29</sup> Using an incoherent background.

<sup>30</sup> Using a coherent background.

## $f_2'(1525)$ BRANCHING RATIOS

$\Gamma(\eta\eta)/\Gamma_{\text{total}}$						$\Gamma_2/\Gamma$
<u>VALUE</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	

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

seen			UEHARA	10A	BELL	$10.6 e^+e^- \rightarrow e^+e^- \eta\eta$
$0.10 \pm 0.03$			<sup>31</sup> PROKOSHKIN	91	GAM4	$300 \pi^- p \rightarrow \pi^- p \eta\eta$

<sup>31</sup> Combining results of GAM4 with those of WA76 on  $K\bar{K}$  central production and results of CBAL, MRK3 and DM2 on  $J/\psi \rightarrow \gamma\eta\eta$ .

$\Gamma(\eta\eta)/\Gamma(K\bar{K})$						$\Gamma_2/\Gamma_1$
<u>VALUE</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	

**$0.118 \pm 0.028$  OUR FIT**

**$0.115 \pm 0.028$  OUR AVERAGE**

$0.119 \pm 0.015 \pm 0.036$	61	<sup>32</sup> BINON	07	GAMS	$32.5 K^- p \rightarrow \eta\eta(\Lambda/\Sigma^0)$
$0.11 \pm 0.04$		<sup>33</sup> 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		$450 p p \rightarrow p_f \eta \eta p_s$
$< 0.50$		BARNES	67	HBC	$4.6, 5.0 K^- p$

<sup>32</sup> Using the compilation of the cross sections for  $f_2'(1525)$  production in  $K^- p$  collisions from ASTON 88D.

<sup>33</sup> Combining results of GAM4 with those of WA76 on  $K\bar{K}$  central production and results of CBAL, MRK3 and DM2 on  $J/\psi \rightarrow \gamma\eta\eta$ .

$\Gamma(\pi\pi)/\Gamma_{\text{total}}$						$\Gamma_3/\Gamma$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>		

**$0.0082 \pm 0.0016$  OUR FIT**

**$0.0075 \pm 0.0016$  OUR AVERAGE**

$0.007 \pm 0.002$		COSTA...	80	OMEG	$10 \pi^- p \rightarrow K^+ K^- n$
$0.027 \begin{matrix} +0.071 \\ -0.013 \end{matrix}$		<sup>34</sup> GORLICH	80	ASPK	$17, 18 \pi^- p$
$0.0075 \pm 0.0025$		<sup>34,35</sup> 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		34 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		34 BEUSCH	75B	OSPK	8.9	$\pi^- p \rightarrow K^0 \bar{K}^0 n$

<sup>34</sup> Assuming that the  $f'_2(1525)$  is produced by an one-pion exchange production mechanism.

<sup>35</sup> MARTIN 79 uses the PAWLICKI 77 data with different input value of the  $f'_2(1525) \rightarrow K \bar{K}$  branching ratio.

### $\Gamma(\pi\pi)/\Gamma(K\bar{K})$

$\Gamma_3/\Gamma_1$

VALUE	DOCUMENT ID	TECN	COMMENT
<b>0.0092 ± 0.0018 OUR FIT</b>			
<b>0.075 ± 0.035</b>	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
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• • • 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		

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

$\Gamma_6/\Gamma_1$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
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• • • 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
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• • • We do not use the following data for averages, fits, limits, etc. • • •

<0.32	95	AGUILAR-...	72B	HBC	3.9,4.6	$K^- p$
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## $f'_2(1525)$ REFERENCES

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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.)
		Translated from YAF 70 1758.		
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.)
CHEKANOV	04	PL B578 33	S. Chekanov <i>et al.</i>	(ZEUS Collab.)
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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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.)
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BARKOV	99	JETPL 70 248	B.P. Barkov <i>et al.</i>	
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 ZETFP 70 242.		
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.)
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BALTRUSAIT...	87	PR D35 2077	R.M. Baltrusaitis <i>et al.</i>	(Mark III Collab.)
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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 de Beaugard <i>et al.</i>	(BARI, BONN+)
GORLICH	80	NP B174 16	L. Gorlich <i>et al.</i>	(CRAC, MPIM, CERN+)
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MARTIN	79	NP B158 520	A.D. Martin, E.N. Ozmutlu	(DURH)
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