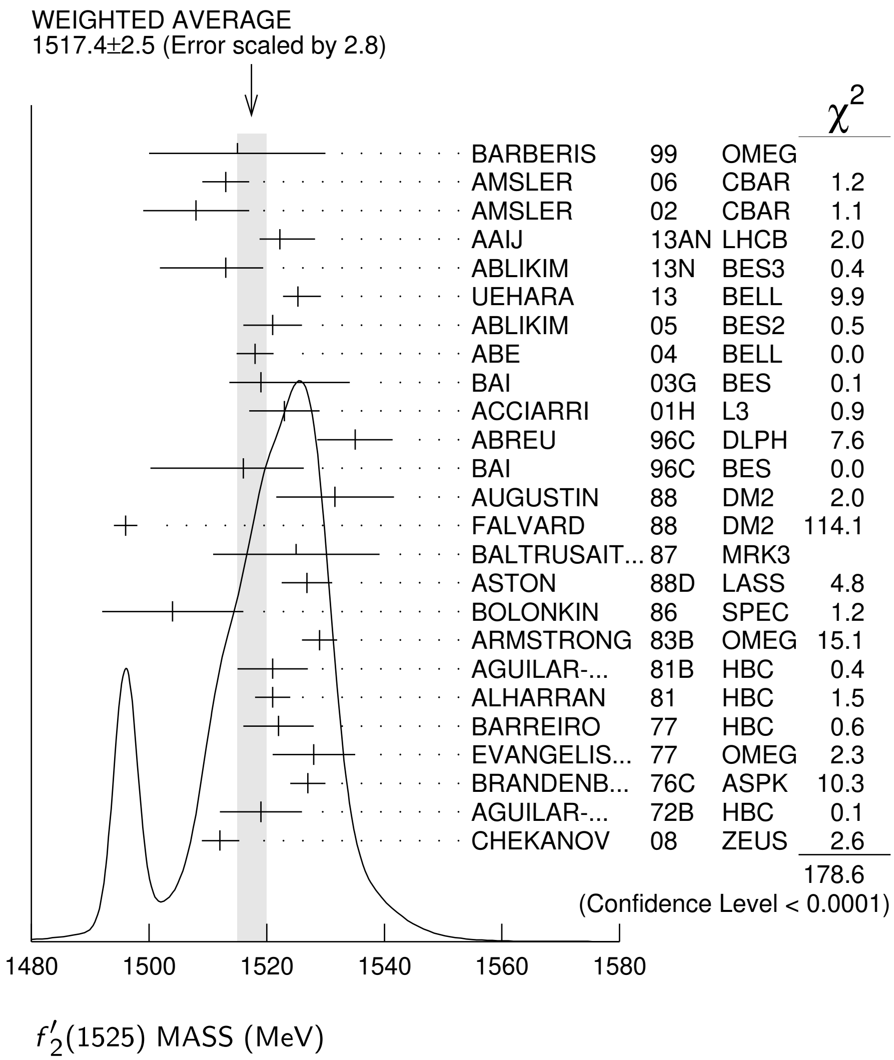
$f_2'(1525)$

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

$f_2'(1525)$ MASS

VALUE (MeV)	*DOCUMENT ID*
1517.4±2.5 OUR AVERAGE Includes data from the 6 datablocks that follow this one. Error includes scale factor of 2.8. See the ideogram below.	



PRODUCED BY PION BEAM

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
The data in this block is included in the average printed for a previous datablock.				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1521 ± 13		TIKHOMIROV 03	SPEC	$40.0\ \pi^- \mathrm{C} \rightarrow K_S^0 K_S^0 K_L^0 X$
$1547^{+10}_{-\ 2}$		[1] LONGACRE 86	MPS	$22\ \pi^- p \rightarrow K_S^0 K_S^0 n$
$1496^{+\ 9}_{-\ 8}$		[2] CHABAUD 81	ASPK	$6\ \pi^- p \rightarrow K^+ K^- n$

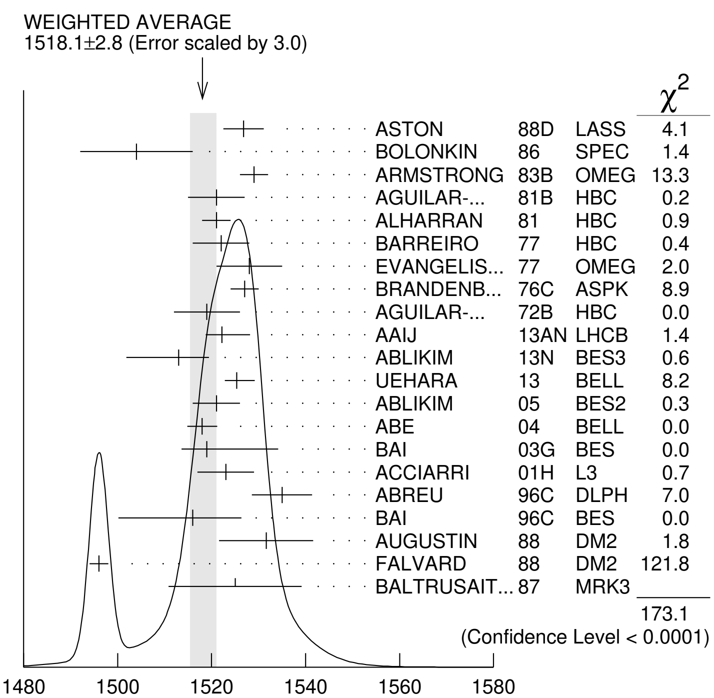
1497^{+8}_{-9}		CHABAUD	81	ASPK	18.4 $\pi^- p \to K^+ K^- n$
1492±29		GORLICH	80	ASPK	17 $\pi^- p$ polarized $\to K^+ K^- n$
1502±25		[3] CORDEN	79	OMEG	12–15 $\pi^- p \to \pi^+ \pi^- n$
1480	14	CRENNELL	66	HBC	6.0 $\pi^- p \to K^0_S K^0_S n$

[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 $K\overline{K}$ channel, making the solution dubious.

PRODUCED BY $K^{\pm}$ BEAM

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
The data in this block is included in the average printed for a previous datablock.					
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 $K^- p \to K^0_S K^0_S \Lambda$
1504 ±12		BOLONKIN	86	SPEC	40 $K^- p \to K^0_S K^0_S Y$
1529 ± 3		ARMSTRONG	83B	OMEG	18.5 $K^- p \to K^- K^+ \Lambda$
1521 ± 6	650	AGUILAR-...	81B	HBC	4.2 $K^- p \to \Lambda K^+ K^-$
1521 ± 3	572	ALHARRAN	81	HBC	8.25 $K^- p \to \Lambda K \overline{K}$
1522 ± 6	123	BARREIRO	77	HBC	4.15 $K^- p \to \Lambda K^0_S K^0_S$
1528 ± 7	166	EVANGELIS...	77	OMEG	10 $K^- p \to K^+ K^- (\Lambda, \Sigma)$
1527 ± 3	120	BRANDENB...	76C	ASPK	13 $K^- p \to K^+ K^- (\Lambda, \Sigma)$
1519 ± 7	100	AGUILAR-...	72B	HBC	3.9,4.6 $K^- p \to K \overline{K} (\Lambda, \Sigma)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1514 ± 8	61	BINON	07	GAMS	32.5 $K^- p \to \eta\eta(\Lambda/\Sigma^0)$
1513 ±10		[1] BARKOV	99	SPEC	40 $K^- p \to K^0_S K^0_S y$

[1] Systematic errors not estimated.



PRODUCED BY $K^{\pm}$ BEAM (MeV)

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

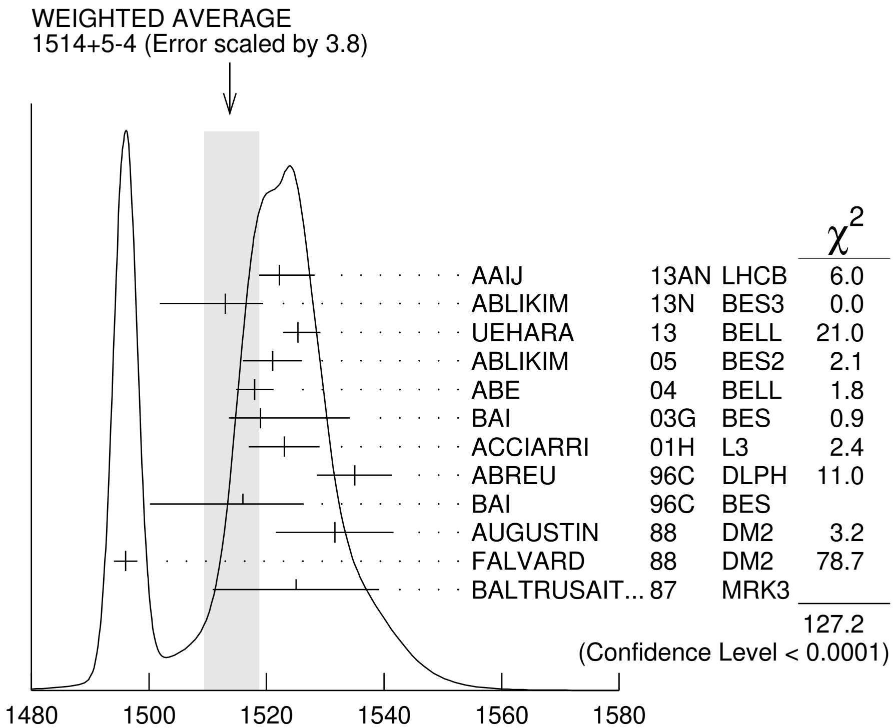
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT

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

1514 $^{+5}_{-4}$ OUR AVERAGE Error includes scale factor of 3.8. See the ideogram below.

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$1522.2 \pm 2.8 ^{+5.3}_{-2.0}$		AAIJ	13AN	LHCB	$\overline{B}^0_s \to J/\psi K^+ K^-$
$1513 \pm 5 ^{+4}_{-10}$	5.5k	[1] ABLIKIM	13N	BES3	$e^+ e^- \to J/\psi \to \gamma\eta\eta$
$1525.3 ^{+1.2}_{-1.4} ^{+3.7}_{-2.1}$		UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
1521 ± 5		ABLIKIM	05	BES2	$J/\psi \to \phi K^+ K^-$
$1518 \pm 1 \pm 3$		ABE	04	BELL	$10.6\ e^+ e^- \to e^+ e^- K^+ K^-$
$1519 \pm 2 ^{+15}_{-5}$		BAI	03G	BES	$J/\psi \to \gamma K \overline{K}$
1523 ± 6	331	[2] ACCIARRI	01H	L3	$91, 183\text{–}209\ e^+ e^- \to e^+ e^- K^0_S K^0_S$
$1535 \pm 5 \pm 4$		ABREU	96C	DLPH	$Z^0 \to K^+ K^- + X$
$1516 \pm 5 ^{+9}_{-15}$		BAI	96C	BES	$J/\psi \to \gamma K^+ K^-$
1531.6 ± 10.0		AUGUSTIN	88	DM2	$J/\psi \to \gamma K^+ K^-$
1496 ± 2		[3] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-$
$1525 \pm 10 \pm 10$		BALTRUSAIT...	87	MRK3	$J/\psi \to \gamma K^+ K^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1503 ± 11		[4] RODAS	22	RVUE	$J/\psi(1S) \to \gamma\ (\pi\pi,\ K\overline{K})$
$1532 \pm 3 \pm 6$	644	[5,6] DOBBS	15		$J/\psi \to \gamma K^+ K^-$
$1557 \pm 9 \pm 3$	113	[5,6] DOBBS	15		$\psi(2S) \to \gamma K^+ K^-$
1526 ± 7	29	[7] LEES	14H	BABR	$e^+ e^- \to K^0_S K^0_S K^+ K^- \gamma$
1523 ± 5	870	[8] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$
1515 ± 5		[9] FALVARD	88	DM2	$J/\psi \to \phi K^+ K^-$

[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.
[2] Supersedes ACCIARRI 95J.
[3] From an analysis including interference with $f_0(1710)$.
[4] T-matrix pole from coupled channel K-matrix fit to data on $J/\psi \to \gamma\pi^0\pi^0$ (ABLIKIM 15AE) and $J/\psi \to \gamma K^0_S K^0_S$ (ABLIKIM 18AA).
[5] Using CLEO-c data but not authored by the CLEO Collaboration.
[6] From a fit to a Breit-Wigner line shape with fixed $\Gamma = 73$ MeV.
[7] From a fit to a Breit-Wigner line shape plus a second-order polynomial function. Systematic errors not evaluated.
[8] From analysis of L3 data at 91 and 183–209 GeV.
[9] From an analysis ignoring interference with $f_0(1710)$.



$f'_2(1525)$ mass, e^+e^- annihilation and particle decays (MeV)

PRODUCED IN $\overline{p}p$ ANNIHILATION

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1512 ± 4 OUR AVERAGE				
1513 ± 4	AMSLER	06	CBAR	$0.9\ \overline{p}p \to K^+K^-\pi^0$
1508 ± 9	[1] AMSLER	02	CBAR	$0.9\ \overline{p}p \to \pi^0\eta\eta,\ \pi^0\pi^0\pi^0$

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1495.0 ± 1.1 ± 8.1	[2] ALBRECHT	20	RVUE	$0.9\ \overline{p}p \to \pi^0\pi^0\eta,\ \pi^0\eta\eta,\ \pi^0K^+K^-$
1530 ± 12	[3] ANISOVICH	09	RVUE	$0.0\ \overline{p}p,\ \pi N$

[1] T-matrix pole.

[2] T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).

[3] 4-poles, 5-channel K matrix fit.

CENTRAL PRODUCTION

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

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

PRODUCED IN ep COLLISIONS

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

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$1512\pm3^{+1.4}_{-0.5}$		[1] CHEKANOV	08	ZEUS	$ep \to K^0_S K^0_S X$

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

1537^{+9}_{-8}	84	[2] CHEKANOV	04	ZEUS	$e p \to K^0_S K^0_S X$

[1] In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a^0_2(1320)$, and $f'_2(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background.

[2] Systematic errors not estimated.

f'_2(1525) WIDTH

VALUE (MeV)	DOCUMENT ID		COMMENT
86 ±5 OUR FIT Error includes scale factor of 2.2.			
$\mathbf{86.9^{+2.3}_{-2.1}}$	PDG	18	Average of width measurements

PRODUCED BY PION BEAM

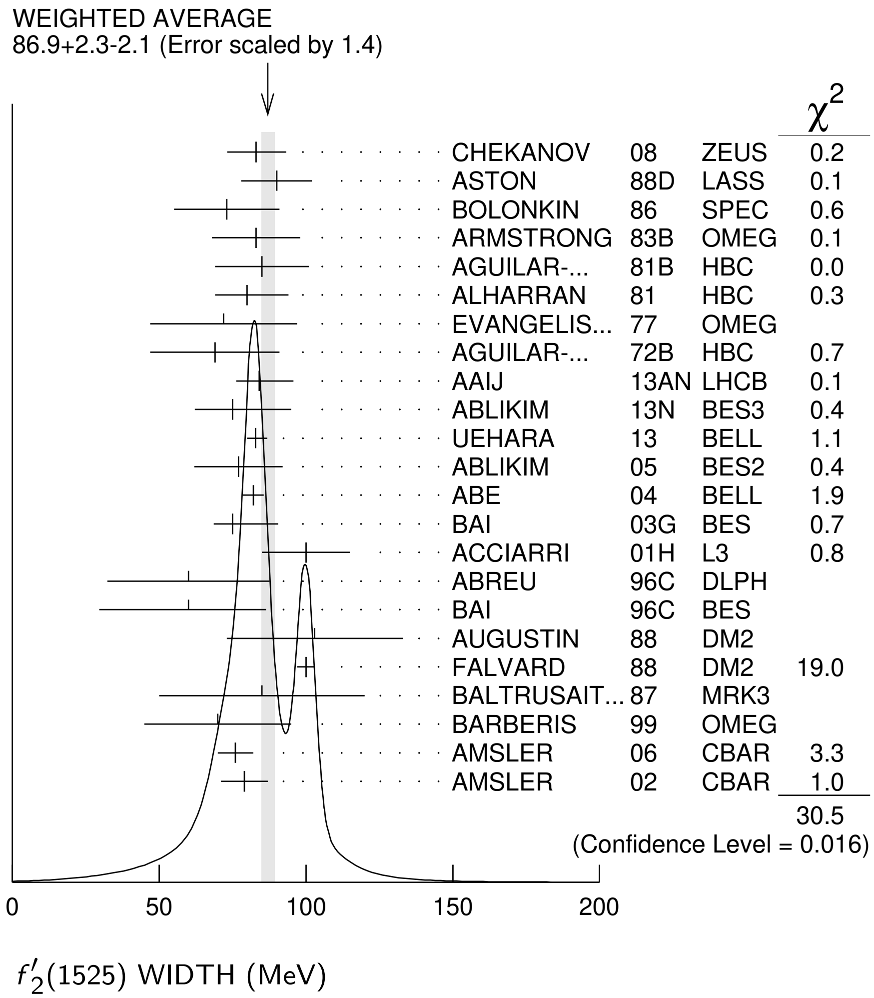
VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
$\mathbf{86.9^{+2.3}_{-2.1}}$ **OUR AVERAGE** Includes data from the 5 datablocks that follow this one. Error includes scale factor of 1.4. See the ideogram below.				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
102 ±42	TIKHOMIROV	03	SPEC	40.0 $\pi^- C \to K^0_S K^0_S K^0_L X$
108^{+5}_{-2}	[1] LONGACRE	86	MPS	22 $\pi^- p \to K^0_S K^0_S n$
69^{+22}_{-16}	[2] CHABAUD	81	ASPK	6 $\pi^- p \to K^+ K^- n$
137^{+23}_{-21}	CHABAUD	81	ASPK	18.4 $\pi^- p \to K^+ K^- n$
150^{+83}_{-50}	GORLICH	80	ASPK	17 $\pi^- p$ polarized $\to K^+ K^- n$
165 ±42	[3] CORDEN	79	OMEG	12–15 $\pi^- p \to \pi^+ \pi^- n$
92^{+39}_{-22}	[4] POLYCHRO...	79	STRC	7 $\pi^- p \to n K^0_S K^0_S$

[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 $K\overline{K}$ channel, making the solution dubious.

[4] From a fit to the D with $f_2(1270)$-$f'_2(1525)$ interference. Mass fixed at 1516 MeV.



PRODUCED BY $K^{\pm}$ BEAM

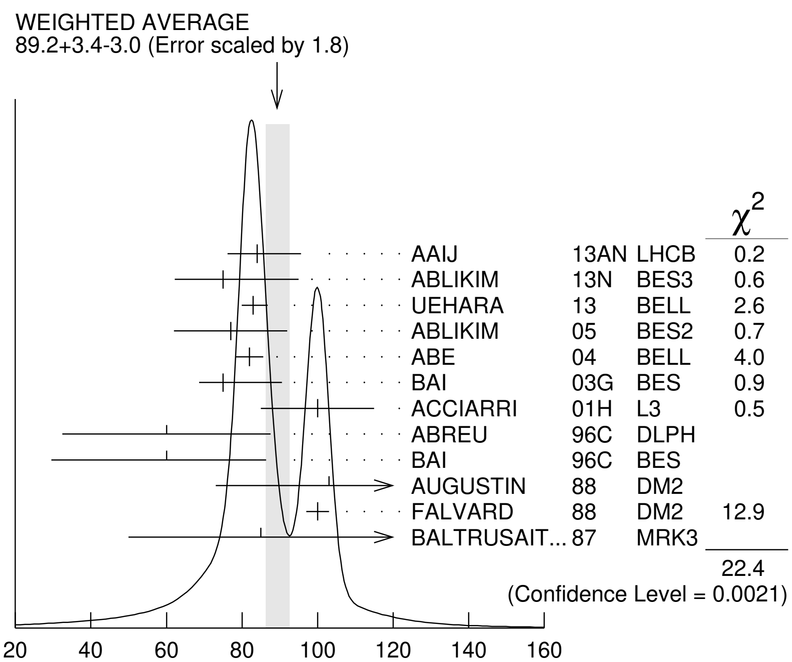
VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
The data in this block is included in the average printed for a previous datablock.				
82± 6 OUR AVERAGE				
90±12		ASTON 88D	LASS	11 $K^- p \to K^0_S K^0_S \Lambda$
73±18		BOLONKIN 86	SPEC	40 $K^- p \to K^0_S K^0_S Y$
83±15		ARMSTRONG 83B	OMEG	18.5 $K^- p \to K^- K^+ \Lambda$
85±16	650	AGUILAR-... 81B	HBC	4.2 $K^- p \to \Lambda K^+ K^-$
80^{+14}_{-11}	572	ALHARRAN 81	HBC	8.25 $K^- p \to \Lambda K \overline{K}$
72±25	166	EVANGELIS... 77	OMEG	10 $K^- p \to K^+ K^- (\Lambda, \Sigma)$
69±22	100	AGUILAR-... 72B	HBC	3.9,4.6 $K^- p \to K \overline{K} (\Lambda, \Sigma)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
92^{+25}_{-16}	61	BINON 07	GAMS	32.5 $K^- p \to \eta\eta(\Lambda/\Sigma^0)$
75±20		[1] BARKOV 99	SPEC	40 $K^- p \to K^0_S K^0_S y$
62^{+19}_{-14}	123	BARREIRO 77	HBC	4.15 $K^- p \to \Lambda K^0_S K^0_S$
61± 8	120	BRANDENB... 76C	ASPK	13 $K^- p \to K^+ K^- (\Lambda, \Sigma)$

[1] Systematic errors not estimated.

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

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

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
$89.2^{+3.4}_{-3.0}$ OUR AVERAGE		Error includes scale factor of 1.8. See the ideogram below.		
$84 \pm 6\ ^{+10}_{-5}$		AAIJ 13AN	LHCB	$\overline{B}^0_s \to J/\psi K^+ K^-$
$75\ ^{+12}_{-10}\ ^{+16}_{-8}$	5.5k	[1] ABLIKIM 13N	BES3	$e^+ e^- \to J/\psi \to \gamma\eta\eta$
$82.9\ ^{+2.1}_{-2.2}\ ^{+3.3}_{-2.0}$		UEHARA 13	BELL	$\gamma\gamma \to K^0_S K^0_S$
77 ± 15		ABLIKIM 05	BES2	$J/\psi \to \phi K^+ K^-$
$82 \pm 2 \pm 3$		ABE 04	BELL	10.6 $e^+ e^- \to e^+ e^- K^+ K^-$
$75 \pm 4\ ^{+15}_{-5}$		BAI 03G	BES	$J/\psi \to \gamma K \overline{K}$
100 ± 15	331	[2] ACCIARRI 01H	L3	91, 183–209 $e^+ e^- \to e^+ e^- K^0_S K^0_S$
$60 \pm 20 \pm 19$		ABREU 96C	DLPH	$Z^0 \to K^+ K^- + X$
$60 \pm 23\ ^{+13}_{-20}$		BAI 96C	BES	$J/\psi \to \gamma K^+ K^-$
103 ± 30		AUGUSTIN 88	DM2	$J/\psi \to \gamma K^+ K^-$
100 ± 3		[3] FALVARD 88	DM2	$J/\psi \to \phi K^+ K^-$
85 ± 35		BALTRUSAIT...87	MRK3	$J/\psi \to \gamma K^+ K^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
84 ± 15		[4] RODAS 22	RVUE	$J/\psi(1S) \to \gamma (\pi\pi, K\overline{K})$
37 ± 12	29	[5] LEES 14H	BABR	$e^+ e^- \to K^0_S K^0_S K^+ K^- \gamma$
104 ± 10	870	[6] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$
62 ± 10		[7] FALVARD 88	DM2	$J/\psi \to \phi K^+ K^-$



[1] From partial wave analysis including all possible combinations of 0^{++}, 2^{++}, and 4^{++} resonances.
[2] Supersedes ACCIARRI 95J.
[3] From an analysis including interference with $f_0(1710)$.
[4] T-matrix pole from coupled channel K-matrix fit to data on $J/\psi \to \gamma \pi^0 \pi^0$ (ABLIKIM 15AE) and $J/\psi \to \gamma K^0_S K^0_S$ (ABLIKIM 18AA).
[5] From a fit to a Breit-Wigner line shape plus a second-order polynomial function. Systematic errors not evaluated.
[6] From analysis of L3 data at 91 and 183–209 GeV.
[7] From an analysis ignoring interference with $f_0(1710)$.

$f'_2(1525)$ width, e^+e^- annihilation and particle decays (MeV)

PRODUCED IN $\overline{p}p$ ANNIHILATION

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
77 ± 5 OUR AVERAGE				
76 ± 6	AMSLER	06	CBAR	0.9 $\overline{p}p \to K^+K^-\pi^0$
79 ± 8	[1] AMSLER	02	CBAR	0.9 $\overline{p}p \to \pi^0\eta\eta$, $\pi^0\pi^0\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
104.8 ± 0.9 ± 9.8	[2] ALBRECHT	20	RVUE	0.9 $\overline{p}p \to \pi^0\pi^0\eta$, $\pi^0\eta\eta$, $\pi^0K^+K^-$
128 ± 20	[3] ANISOVICH	09	RVUE	0.0 $\overline{p}p$, πN

[1] T-matrix pole.
[2] T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).
[3] K-matrix, 4-poles, 5-channel fit.

CENTRAL PRODUCTION

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

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

PRODUCED IN ep COLLISIONS

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

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
83± 9^{+5}_{-4}		[1] CHEKANOV	08	ZEUS	$ep \to K^0_S K^0_S X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
50^{+34}_{-22}	84	[2] CHEKANOV	04	ZEUS	$ep \to K^0_S K^0_S X$

[1] In the SU(3) based model with a specific interference pattern of the $f_2(1270)$, $a^0_2(1320)$, and $f'_2(1525)$ mesons incoherently added to the $f_0(1710)$ and non-resonant background.
[2] Systematic errors not estimated.

$f_2'(1525)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)	Scale factor
Γ_1	$K\overline{K}$	(87.6 ± 2.2) %	1.1
Γ_2	$\eta\eta$	(11.6 ± 2.2) %	1.1
Γ_3	$\pi\pi$	$(8.3\pm1.6)\times10^{-3}$	
Γ_4	$K\overline{K}^*(892)+$ c.c.		
Γ_5	$\pi K\overline{K}$		
Γ_6	$\pi\pi\eta$		
Γ_7	$\pi^+\pi^+\pi^-\pi^-$		
Γ_8	$\gamma\gamma$	$(9.5\pm1.1)\times10^{-7}$	1.1

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 $\chi^2 = 18.2$ for 13 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle\delta p_i\delta p_j\right\rangle/(\delta p_i\cdot\delta p_j)$, 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	−19	19	1	
Γ	−4	4	0	−44
	x_1	x_2	x_3	x_8

	Mode	Rate (MeV)	Scale factor
Γ_1	$K\overline{K}$	75 ± 4	1.8
Γ_2	$\eta\eta$	9.9 ± 1.9	1.1
Γ_3	$\pi\pi$	0.71 ± 0.14	1.1
Γ_8	$\gamma\gamma$	$(8.2\pm0.9)\times10^{-5}$	

$f_2'(1525)$ PARTIAL WIDTHS

$\Gamma(K\overline{K})$ Γ_1

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
75±4 OUR FIT Error includes scale factor of 1.8.				
$\mathbf{63^{+6}_{-5}}$	[1] LONGACRE	86	MPS	$22\ \pi^- p \to K^0_S K^0_S n$

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

$\Gamma(\eta\eta)$ Γ_2

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
9.9±1.9 OUR FIT Error includes scale factor of 1.1.					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
5.0±0.8	870	[1] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$
$24 \ {}^{+3}_{-1}$		[2] LONGACRE	86	MPS	$22\ \pi^- p \to K^0_S K^0_S n$

[1] From analysis of L3 data at 91 and 183–209 GeV, using $\Gamma(f'_2(1525) \to K\overline{K}) = 68$ MeV and SU(3) relations.
[2] From a partial-wave analysis of data using a K-matrix formalism with 5 poles.

$\Gamma(\pi\pi)$ Γ_3

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.71±0.14 OUR FIT Error includes scale factor of 1.1.					
$\mathbf{1.4\ {}^{+1.0}_{-0.5}}$		[1] LONGACRE	86	MPS	$22\ \pi^- p \to K^0_S K^0_S n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.2\ {}^{+1.0}_{-0.2}$	870	[2] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

[1] From a partial-wave analysis of data using a K-matrix formalism with 5 poles.
[2] From analysis of L3 data at 91 and 183–209 GeV, using $\Gamma(f'_2(1525) \to K\overline{K}) = 68$ MeV and SU(3) relations.

$\Gamma(\gamma\gamma)$ Γ_8

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.082±0.009 OUR FIT					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.13 ±0.03	870	[1] SCHEGELSKY	06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

[1] From analysis of L3 data at 91 and 183–209 GeV, using $\Gamma(f'_2(1525) \to K\overline{K}) = 68$ MeV and SU(3) relations.

$\Gamma(K\overline{K})/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.746 \pm 0.002 {}^{+0.166}_{-0.162}$	[1] ALBRECHT	20	RVUE	$0.9\ \overline{p}p \to \pi^0\pi^0\eta,\ \pi^0\eta\eta,\ \pi^0 K^+ K^-$

[1] Residue from T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).

$f'_2(1525)$ Γ(i)Γ(γγ)/Γ(total)

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

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
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	$\gamma\gamma \to K^0_S K^0_S$
0.0564±0.0048±0.0116		ABE	04	BELL	$10.6\ e^+ e^- \to e^+ e^- K^+ K^-$

0.076	±0.006	±0.011	331	[1] ACCIARRI	01H	L3	$e^+e^- \to e^+e^- K^0_S K^0_S$
0.067	±0.008	±0.015		[2] ALBRECHT	90G	ARG	$e^+e^- \to e^+e^- K^+K^-$
0.11	$^{+0.03}_{-0.02}$	±0.02		BEHREND	89C	CELL	$e^+e^- \to e^+e^- K^0_S K^0_S$
0.10	$^{+0.04}_{-0.03}$	$^{+0.03}_{-0.02}$		BERGER	88	PLUT	$e^+e^- \to e^+e^- K^0_S K^0_S$
0.12	±0.07	±0.04		[2] AIHARA	86B	TPC	$e^+e^- \to e^+e^- K^+K^-$
0.11	±0.02	±0.04		[2] ALTHOFF	83	TASS	$e^+e^- \to e^+e^- K\overline{K}$
• • • We do not use the following data for averages, fits, limits, etc. • • •							
0.0314	±0.0050	±0.0077		[3] ALBRECHT	90G	ARG	$e^+e^- \to e^+e^- K^+K^-$

[1] Supersedes ACCIARRI 95J. From analysis of L3 data at 91 and 183–209 GeV,
[2] Using an incoherent background.
[3] Using a coherent background.

$f'_2(1525)$ BRANCHING RATIOS

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

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.059±0.003±0.026	[1] ALBRECHT	20	RVUE	$0.9\ \overline{p}p \to \pi^0\pi^0\eta$, $\pi^0\eta\eta$, $\pi^0K^+K^-$
seen	UEHARA	10A	BELL	$10.6\ e^+e^- \to e^+e^-\eta\eta$
0.10 ±0.03	[2] PROKOSHKIN	91	GAM4	$300\ \pi^-p \to \pi^-p\eta\eta$

[1] Residue from T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).
[2] Combining results of GAM4 with those of WA76 on $K\overline{K}$ central production and results of CBAL, MRK3 and DM2 on $J/\psi \to \gamma\eta\eta$.

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

VALUE	*CL%*	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.132±0.028 OUR FIT						
0.115±0.028 OUR AVERAGE						
0.119±0.015±0.036		61	[1] BINON	07	GAMS	$32.5\ K^-p \to \eta\eta(\Lambda/\Sigma^0)$
0.11 ±0.04			[2] PROKOSHKIN	91	GAM4	$300\ \pi^-p \to \pi^-p\eta\eta$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.14	90		BARBERIS	00E		$450\ pp \to p_f\eta\eta p_s$
<0.50			BARNES	67	HBC	$4.6,5.0\ K^-p$

[1] Using the compilation of the cross sections for $f'_2(1525)$ production in K^-p collisions from ASTON 88D.
[2] Combining results of GAM4 with those of WA76 on $K\overline{K}$ central production and results of CBAL, MRK3 and DM2 on $J/\psi \to \gamma\eta\eta$.

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

VALUE (units 10^{-2})	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.83±0.16 OUR FIT					
0.75±0.16 OUR AVERAGE					
0.7 ±0.2		COSTA	80	OMEG	$10\ \pi^-p \to K^+K^-n$
2.7 $^{+7.1}_{-1.3}$		[1] GORLICH	80	ASPK	$17,18\ \pi^-p$
0.75±0.25		[1,2] MARTIN	79	RVUE	

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

3.4 ±1.5 ±1.0		[3] ALBRECHT	20	RVUE	0.9 $\overline{p}p \to \pi^0\pi^0\eta$, $\pi^0\eta\eta$, $\pi^0 K^+ K^-$
< 6	95	AGUILAR-...	81B	HBC	4.2 $K^- p \to \Lambda K^+ K^-$
19 ±3		CORDEN	79	OMEG	12–15 $\pi^- p \to \pi^+\pi^- n$
< 4.5	95	BARREIRO	77	HBC	4.15 $K^- p \to \Lambda K^0_S K^0_S$
1.2 ±0.4		[1] PAWLICKI	77	SPEC	6 $\pi N \to K^+ K^- N$
< 6.3	90	BRANDENB...	76C	ASPK	13 $K^- p \to K^+ K^- (\Lambda, \Sigma)$
< 0.86		[1] BEUSCH	75B	OSPK	8.9 $\pi^- p \to K^0 \overline{K}^0 n$

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

[2] MARTIN 79 uses the PAWLICKI 77 data with different input value of the $f'_2(1525) \to K\overline{K}$ branching ratio.

[3] Residue from T-matrix pole, 4 poles, 4 channels, including scattering data from HYAMS 75 ($\pi\pi$), LONGACRE 86 ($K\overline{K}$), BINON 83 ($\eta\eta$).

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

VALUE	DOCUMENT ID		TECN	COMMENT
0.0094±0.0018 OUR FIT				
0.075 ±0.035	AUGUSTIN	87	DM2	$J/\psi \to \gamma\pi^+\pi^-$

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

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	

$\Gamma(\pi\pi\eta)/\Gamma(K\overline{K})$ 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	

$\Gamma(\pi^+\pi^+\pi^-\pi^-)/\Gamma(K\overline{K})$ Γ_7/Γ_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

RODAS	22	EPJ C82 80	A. Rodas *et al.*	(JPAC Collab.)
ALBRECHT	20	EPJ C80 453	M. Albrecht *et al.*	(Crystal Barrel Collab.)
ABLIKIM	18AA	PR D98 072003	M. Ablikim *et al.*	(BESIII Collab.)
PDG	18	PR D98 030001	M. Tanabashi *et al.*	(PDG Collab.)
ABLIKIM	15AE	PR D92 052003	M. Ablikim *et al.*	(BESIII Collab.)
DOBBS	15	PR D91 052006	S. Dobbs *et al.*	(NWES)
LEES	14H	PR D89 092002	J.P. Lees *et al.*	(BABAR Collab.)
AAIJ	13AN	PR D87 072004	R. Aaij *et al.*	(LHCb Collab.)
ABLIKIM	13N	PR D87 092009	M. Ablikim *et al.*	(BESIII Collab.)
UEHARA	13	PTEP 2013 123C01	S. Uehara *et al.*	(BELLE Collab.)
UEHARA	10A	PR D82 114031	S. Uehara *et al.*	(BELLE Collab.)
ANISOVICH	09	IJMP A24 2481	V.V. Anisovich, A.V. Sarantsev	
CHEKANOV	08	PRL 101 112003	S. Chekanov *et al.*	(ZEUS Collab.)

BINON	07	PAN 70 1713	F. Binon *et al.*	(GAMS Collab.)
		Translated from YAF 70 1758.		
AMSLER	06	PL B639 165	C. Amsler *et al.*	(Crystal Barrel Collab.)
SCHEGELSKY	06A	EPJ A27 207	V.A. Schegelsky *et al.*	
ABLIKIM	05	PL B607 243	M. Ablikim *et al.*	(BES Collab.)
ABE	04	EPJ C32 323	K. Abe *et al.*	(BELLE Collab.)
CHEKANOV	04	PL B578 33	S. Chekanov *et al.*	(ZEUS Collab.)
BAI	03G	PR D68 052003	J.Z. Bai *et al.*	(BES Collab.)
TIKHOMIROV	03	PAN 66 828	G.D. Tikhomirov *et al.*	
		Translated from YAF 66 860.		
AMSLER	02	EPJ C23 29	C. Amsler *et al.*	
ACCIARRI	01H	PL B501 173	M. Acciarri *et al.*	(L3 Collab.)
BARBERIS	00E	PL B479 59	D. Barberis *et al.*	(WA 102 Collab.)
BARBERIS	99	PL B453 305	D. Barberis *et al.*	(Omega Expt.)
BARKOV	99	JETPL 70 248	B.P. Barkov *et al.*	
		Translated from ZETFP 70 242.		
ABREU	96C	PL B379 309	P. Abreu *et al.*	(DELPHI Collab.)
BAI	96C	PRL 77 3959	J.Z. Bai *et al.*	(BES Collab.)
ACCIARRI	95J	PL B363 118	M. Acciarri *et al.*	(L3 Collab.)
PROKOSHKIN	91	SPD 36 155	Y.D. Prokoshkin	(GAM2 and GAM4 Collab.)
		Translated from DANS 316 900.		
ALBRECHT	90G	ZPHY C48 183	H. Albrecht *et al.*	(ARGUS Collab.)
BEHREND	89C	ZPHY C43 91	H.J. Behrend *et al.*	(CELLO Collab.)
ASTON	88D	NP B301 525	D. Aston *et al.*	(SLAC, NAGO, CINC, INUS)
AUGUSTIN	88	PRL 60 2238	J.E. Augustin *et al.*	(DM2 Collab.)
BERGER	88	ZPHY C37 329	C. Berger *et al.*	(PLUTO Collab.)
FALVARD	88	PR D38 2706	A. Falvard *et al.*	(CLER, FRAS, LALO+)
AUGUSTIN	87	ZPHY C36 369	J.E. Augustin *et al.*	(LALO, CLER, FRAS+)
BALTRUSAIT...	87	PR D35 2077	R.M. Baltrusaitis *et al.*	(Mark III Collab.)
AIHARA	86B	PRL 57 404	H. Aihara *et al.*	(TPC-2γ Collab.)
BOLONKIN	86	SJNP 43 776	B.V. Bolonkin *et al.*	(ITEP) JP
		Translated from YAF 43 1211.		
LONGACRE	86	PL B177 223	R.S. Longacre *et al.*	(BNL, BRAN, CUNY+)
ALTHOFF	83	PL 121B 216	M. Althoff *et al.*	(TASSO Collab.)
ARMSTRONG	83B	NP B224 193	T.A. Armstrong *et al.*	(BARI, BIRM, CERN+)
BINON	83	NC 78A 313	F.G. Binon *et al.*	(BELG, LAPP, SERP+)
AGUILAR-...	81B	ZPHY C8 313	M. Aguilar-Benitez *et al.*	(CERN, CDEF+)
ALHARRAN	81	NP B191 26	S. Al-Harran *et al.*	(BIRM, CERN, GLAS+)
CHABAUD	81	APP B12 575	V. Chabaud *et al.*	(CERN, CRAC, MPIM)
COSTA	80	NP B175 402	G. Costa *et al.*	(BARI, BONN, CERN, GLAS+)
GORLICH	80	NP B174 16	L. Gorlich *et al.*	(CRAC, MPIM, CERN+)
CORDEN	79	NP B157 250	M.J. Corden *et al.*	(BIRM, RHEL, TELA+) JP
MARTIN	79	NP B158 520	A.D. Martin, E.N. Ozmutlu	(DURH)
POLYCHRO...	79	PR D19 1317	V.A. Polychronakos *et al.*	(NDAM, ANL)
BARREIRO	77	NP B121 237	F. Barreiro *et al.*	(CERN, AMST, NIJM+)
EVANGELIS...	77	NP B127 384	C. Evangelista *et al.*	(BARI, BONN, CERN+)
PAWLICKI	77	PR D15 3196	A.J. Pawlicki *et al.*	(ANL) IJP
BRANDENB...	76C	NP B104 413	G.W. Brandenburg *et al.*	(SLAC)
BEUSCH	75B	PL 60B 101	W. Beusch *et al.*	(CERN, ETH)
HYAMS	75	NP B100 205	B.D. Hyams *et al.*	(CERN, MPIM)
AGUILAR-...	72B	PR D6 29	M. Aguilar-Benitez *et al.*	(BNL)
AMMAR	67	PRL 19 1071	R. Ammar *et al.*	(NWES, ANL) JP
BARNES	67	PRL 19 964	V.E. Barnes *et al.*	(BNL, SYRA) IJPC
CRENNELL	66	PRL 16 1025	D.J. Crennell *et al.*	(BNL) I