$\rho(1700)$

$I^G(J^{PC}) = 1^+(1^{--})$

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$\rho(1700)$ MASS

$\eta\rho^0$ AND $\pi^+\pi^-$ MODES

VALUE (MeV)	*DOCUMENT ID*
1720±20 OUR ESTIMATE	

$\eta\rho^0$ MODE

VALUE (MeV)	*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. • • •

1740±20	ANTONELLI	88	DM2	$e^+e^- \rightarrow \eta\pi^+\pi^-$
1701±15	[1] FUKUI	88	SPEC	$8.95\ \pi^- p \rightarrow \eta\pi^+\pi^- n$

[1] Assuming $\rho^+ f_0(1370)$ decay mode interferes with $a_1(1260)^+\pi$ background. From a two Breit-Wigner fit.

$\pi\pi$ MODE

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. • • •

$1780 \pm 20\ ^{+15}_{-20}$	63.5k	[2] ABRAMOWICZ	12	ZEUS	$ep \rightarrow e\pi^+\pi^- p$
1861 ± 17		[3] LEES	12G	BABR	$e^+e^- \rightarrow \pi^+\pi^-\gamma$
$1728 \pm 17 \pm 89$	5.4M	[4,5] FUJIKAWA	08	BELL	$\tau^- \rightarrow \pi^-\pi^0\nu_\tau$
$1780\ ^{+37}_{-29}$		[6] ABELE	97	CBAR	$\overline{p}n \rightarrow \pi^-\pi^0\pi^0$
1719 ± 15		[6] BERTIN	97C	OBLX	$0.0\ \overline{p}p \rightarrow \pi^+\pi^-\pi^0$
1730 ± 30		CLEGG	94	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
1768 ± 21		BISELLO	89	DM2	$e^+e^- \rightarrow \pi^+\pi^-$
1745.7 ± 91.9		DUBNICKA	89	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
1546 ± 26		GESHKEN...	89	RVUE	
1650		[7] ERKAL	85	RVUE	20–70 $\gamma p \rightarrow \gamma\pi$
1550 ± 70		ABE	84B	HYBR	20 $\gamma p \rightarrow \pi^+\pi^- p$
1590 ± 20		[8] ASTON	80	OMEG	20–70 $\gamma p \rightarrow p2\pi$
1600 ± 10		[9] ATIYA	79B	SPEC	50 $\gamma C \rightarrow C2\pi$
$1598\ ^{+24}_{-22}$		BECKER	79	ASPK	17 $\pi^- p$ polarized
1659 ± 25		[7] LANG	79	RVUE	
1575		[7] MARTIN	78C	RVUE	17 $\pi^- p \rightarrow \pi^+\pi^- n$
1610 ± 30		[7] FROGGATT	77	RVUE	17 $\pi^- p \rightarrow \pi^+\pi^- n$
1590 ± 20		[10] HYAMS	73	ASPK	17 $\pi^- p \rightarrow \pi^+\pi^- n$

[2] Using the KUHN 90 parametrization of the pion form factor, neglecting ρ–ω interference.

[3] Using the GOUNARIS 68 parametrization of the pion form factor leaving the masses and widths of the $\rho(1450)$, $\rho(1700)$, and $\rho(2150)$ resonances as free parameters of the fit.

[4] $|F_\pi(0)|^2$ fixed to 1.

[5] From the GOUNARIS 68 parametrization of the pion form factor.
[6] T-matrix pole.
[7] From phase shift analysis of HYAMS 73 data.
[8] Simple relativistic Breit-Wigner fit with constant width.
[9] An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.
[10] Included in BECKER 79 analysis.

$\pi\omega$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1708±41	7815	[11] ACHASOV	13	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$
1550 to 1620		[12] ACHASOV	00I	SND	$e^+e^- \to \pi^0\pi^0\gamma$
1580 to 1710		[13] ACHASOV	00I	SND	$e^+e^- \to \pi^0\pi^0\gamma$
1710±90		ACHASOV	97	RVUE	$e^+e^- \to \omega\pi^0$

[11] From a phenomenological model based on vector meson dominance with the interfering $\rho(1450)$ and $\rho(1700)$ and their widths fixed at 400 and 250 MeV, respectively. Systematic uncertainty not estimated.
[12] Taking into account both $\rho(1450)$ and $\rho(1700)$ contributions. Using the data of ACHASOV 00I on $e^+e^- \to \omega\pi^0$ and of EDWARDS 00A on $\tau^- \to \omega\pi^-\nu_\tau$. $\rho(1450)$ mass and width fixed at 1400 MeV and 500 MeV respectively.
[13] Taking into account the $\rho(1700)$ contribution only. Using the data of ACHASOV 00I on $e^+e^- \to \omega\pi^0$ and of EDWARDS 00A on $\tau^- \to \omega\pi^-\nu_\tau$.

$K\overline{K}$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1740.8±22.2	27k	[14] ABELE	99D	CBAR	±	0.0 $\overline{p}p \to K^+K^-\pi^0$
1582 ±36	1600	CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$

[14] K-matrix pole. Isospin not determined, could be $\omega(1650)$ or $\phi(1680)$.

2 $(\pi^+\pi^-)$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1851^{+27}_{-24}		ACHASOV	97	RVUE	$e^+e^- \to 2(\pi^+\pi^-)$
1570± 20		[15] CORDIER	82	DM1	$e^+e^- \to 2(\pi^+\pi^-)$
1520± 30		[16] ASTON	81E	OMEG	20–70 $\gamma p \to p4\pi$
1654± 25		[17] DIBIANCA	81	DBC	$\pi^+d \to pp2(\pi^+\pi^-)$
1666± 39		[15] BACCI	80	FRAG	$e^+e^- \to 2(\pi^+\pi^-)$
1780	34	KILLIAN	80	SPEC	11 $e^-p \to 2(\pi^+\pi^-)$
1500		[18] ATIYA	79B	SPEC	50 $\gamma C \to C4\pi^\pm$
1570± 60	65	[19] ALEXANDER	75	HBC	7.5 $\gamma p \to p4\pi$
1550± 60		[16] CONVERSI	74	OSPK	$e^+e^- \to 2(\pi^+\pi^-)$
1550± 50	160	SCHACHT	74	STRC	5.5–9 $\gamma p \to p4\pi$
1450±100	340	SCHACHT	74	STRC	9–18 $\gamma p \to p4\pi$
1430± 50	400	BINGHAM	72B	HBC	9.3 $\gamma p \to p4\pi$

[15] Simple relativistic Breit-Wigner fit with model dependent width.
[16] Simple relativistic Breit-Wigner fit with constant width.
[17] One peak fit result.
[18] Parameters roughly estimated, not from a fit.
[19] Skew mass distribution compensated by Ross-Stodolsky factor.

$\pi^+\pi^-\pi^0\pi^0$ MODE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1660±30	ATKINSON	85B	OMEG	20–70 γp

$3(\pi^+\pi^-)$ AND $2(\pi^+\pi^-\pi^0)$ MODES

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1730±34	[20] FRABETTI	04	E687	$\gamma p \to 3\pi^+ 3\pi^- p$
1783±15	CLEGG	90	RVUE	$e^+e^- \to 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$

[20] From a fit with two resonances with the JACOB 72 continuum.

$\rho(1700)$ WIDTH

$\eta\rho^0$ AND $\pi^+\pi^-$ MODES

VALUE (MeV)	DOCUMENT ID
250±100 OUR ESTIMATE	

$\eta\rho^0$ MODE

VALUE (MeV)	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. • • •				
150±30	ANTONELLI	88	DM2	$e^+e^- \to \eta\pi^+\pi^-$
282±44	[21] FUKUI	88	SPEC	8.95 $\pi^- p \to \eta\pi^+\pi^- n$

[21] Assuming $\rho^+ f_0(1370)$ decay mode interferes with $a_1(1260)^+\pi$ background. From a two Breit-Wigner fit.

$\pi\pi$ MODE

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. • • •					
$310 \pm 30 ^{+25}_{-35}$	63.5k	[22] ABRAMOWICZ	12	ZEUS	$e p \to e\pi^+\pi^- p$
316 ± 26		[23] LEES	12G	BABR	$e^+e^- \to \pi^+\pi^-\gamma$
$164 \pm 21 ^{+89}_{-26}$	5.4M	[24,25] FUJIKAWA	08	BELL	$\tau^- \to \pi^-\pi^0\nu_\tau$
275 ± 45		[26] ABELE	97	CBAR	$\overline{p} n \to \pi^-\pi^0\pi^0$
310 ± 40		[26] BERTIN	97C	OBLX	0.0 $\overline{p} p \to \pi^+\pi^-\pi^0$
400 ± 100		CLEGG	94	RVUE	$e^+e^- \to \pi^+\pi^-$
224 ± 22		BISELLO	89	DM2	$e^+e^- \to \pi^+\pi^-$
242.5 ± 163.0		DUBNICKA	89	RVUE	$e^+e^- \to \pi^+\pi^-$
620 ± 60		GESHKEN...	89	RVUE	
<315		[27] ERKAL	85	RVUE	20–70 $\gamma p \to \gamma\pi$
$280 ^{+30}_{-80}$		ABE	84B	HYBR	20 $\gamma p \to \pi^+\pi^- p$
230 ± 80		[28] ASTON	80	OMEG	20–70 $\gamma p \to p 2\pi$
283 ± 14		[29] ATIYA	79B	SPEC	50 $\gamma C \to C 2\pi$
$175 ^{+98}_{-53}$		BECKER	79	ASPK	17 $\pi^- p$ polarized

232 ± 34	[27] LANG	79	RVUE	
340	[27] MARTIN	78C	RVUE	17 $\pi^- p \to \pi^+\pi^- n$
300 ±100	[27] FROGGATT	77	RVUE	17 $\pi^- p \to \pi^+\pi^- n$
180 ± 50	[30] HYAMS	73	ASPK	17 $\pi^- p \to \pi^+\pi^- n$

[22] Using the KUHN 90 parametrization of the pion form factor, neglecting ρ–ω interference.
[23] Using the GOUNARIS 68 parametrization of the pion form factor leaving the masses and widths of the $\rho(1450)$, $\rho(1700)$, and $\rho(2150)$ resonances as free parameters of the fit.
[24] $|F_\pi(0)|^2$ fixed to 1.
[25] From the GOUNARIS 68 parametrization of the pion form factor.
[26] T-matrix pole.
[27] From phase shift analysis of HYAMS 73 data.
[28] Simple relativistic Breit-Wigner fit with constant width.
[29] An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.
[30] Included in BECKER 79 analysis.

$K\overline{K}$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
187.2± 26.7	27k	[31] ABELE	99D	CBAR	±	0.0 $\overline{p}p \to K^+K^-\pi^0$
265 ±120	1600	CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$

[31] K-matrix pole. Isospin not determined, could be $\omega(1650)$ or $\phi(1680)$.

2 $(\pi^+\pi^-)$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
510± 40		[32] CORDIER	82	DM1	$e^+e^- \to 2(\pi^+\pi^-)$
400± 50		[33] ASTON	81E	OMEG	20–70 $\gamma p \to p4\pi$
400±146		[34] DIBIANCA	81	DBC	$\pi^+ d \to pp2(\pi^+\pi^-)$
700±160		[32] BACCI	80	FRAG	$e^+e^- \to 2(\pi^+\pi^-)$
100	34	KILLIAN	80	SPEC	11 $e^- p \to 2(\pi^+\pi^-)$
600		[35] ATIYA	79B	SPEC	50 $\gamma C \to C4\pi^\pm$
340±160	65	[36] ALEXANDER	75	HBC	7.5 $\gamma p \to p4\pi$
360±100		[33] CONVERSI	74	OSPK	$e^+e^- \to 2(\pi^+\pi^-)$
400±120	160	[37] SCHACHT	74	STRC	5.5–9 $\gamma p \to p4\pi$
850±200	340	[37] SCHACHT	74	STRC	9–18 $\gamma p \to p4\pi$
650±100	400	BINGHAM	72B	HBC	9.3 $\gamma p \to p4\pi$

[32] Simple relativistic Breit-Wigner fit with model-dependent width.
[33] Simple relativistic Breit-Wigner fit with constant width.
[34] One peak fit result.
[35] Parameters roughly estimated, not from a fit.
[36] Skew mass distribution compensated by Ross-Stodolsky factor.
[37] Width errors enlarged by us to $4\Gamma/\sqrt{N}$; see the note with the $K^*(892)$ mass.

$\pi^+\pi^-\pi^0\pi^0$ MODE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
300±50	ATKINSON	85B	OMEG	20–70 γp

$\omega\pi^0$ MODE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
350 to 580	[38] ACHASOV	00I	SND	$e^+e^- \rightarrow \pi^0\pi^0\gamma$
490 to 1040	[39] ACHASOV	00I	SND	$e^+e^- \rightarrow \pi^0\pi^0\gamma$

[38] Taking into account both $\rho(1450)$ and $\rho(1700)$ contributions. Using the data of ACHASOV 00I on $e^+e^- \rightarrow \omega\pi^0$ and of EDWARDS 00A on $\tau^- \rightarrow \omega\pi^-\nu_\tau$. $\rho(1450)$ mass and width fixed at 1400 MeV and 500 MeV respectively.

[39] Taking into account the $\rho(1700)$ contribution only. Using the data of ACHASOV 00I on $e^+e^- \rightarrow \omega\pi^0$ and of EDWARDS 00A on $\tau^- \rightarrow \omega\pi^-\nu_\tau$.

$3(\pi^+\pi^-)$ AND $2(\pi^+\pi^-\pi^0)$ MODES

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
315 ± 100	[40] FRABETTI	04	E687	$\gamma p \rightarrow 3\pi^+3\pi^-p$
$285\pm\ 20$	CLEGG	90	RVUE	$e^+e^- \rightarrow 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$

[40] From a fit with two resonances with the JACOB 72 continuum.

$\rho(1700)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	4π	
Γ_2	$2(\pi^+\pi^-)$	large
Γ_3	$\rho\pi\pi$	dominant
Γ_4	$\rho^0\pi^+\pi^-$	large
Γ_5	$\rho^0\pi^0\pi^0$	
Γ_6	$\rho^\pm\pi^\mp\pi^0$	large
Γ_7	$a_1(1260)\pi$	seen
Γ_8	$h_1(1170)\pi$	seen
Γ_9	$\pi(1300)\pi$	seen
Γ_{10}	$\rho\rho$	seen
Γ_{11}	$\pi^+\pi^-$	seen
Γ_{12}	$\pi\pi$	seen
Γ_{13}	$K\overline{K}^*(892)+$ c.c.	seen
Γ_{14}	$\eta\rho$	seen
Γ_{15}	$a_2(1320)\pi$	not seen
Γ_{16}	$K\overline{K}$	seen
Γ_{17}	e^+e^-	seen
Γ_{18}	$\pi^0\omega$	seen

$\rho(1700)$ $\Gamma(i)\Gamma(e^+e^-)/\Gamma(\text{total})$

This combination of a partial width with the partial width into e^+e^- and with the total width is obtained from the cross-section into channel$_I$ in e^+e^- annihilation.

$\Gamma(2(\pi^+\pi^-)) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_2\Gamma_{17}/\Gamma$

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.6 $\pm$0.2	DELCOURT	81B	DM1	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
2.83$\pm$0.42	BACCI	80	FRAG	$e^+e^- \rightarrow 2(\pi^+\pi^-)$

$\Gamma(\pi^+\pi^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_{11}\Gamma_{17}/\Gamma$

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.13	[41] DIEKMAN	88	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
$0.029^{+0.016}_{-0.012}$	KURDADZE	83	OLYA	0.64–1.4 $e^+e^- \rightarrow \pi^+\pi^-$

[41] Using total width = 220 MeV.

$\Gamma(K\overline{K}^*(892)+\text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_{13}\Gamma_{17}/\Gamma$

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.305$\pm$0.071	[42] BIZOT	80	DM1	e^+e^-

[42] Model dependent.

$\Gamma(\eta\rho) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_{14}\Gamma_{17}/\Gamma$

VALUE (eV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
7$\pm$3	ANTONELLI	88	DM2	$e^+e^- \rightarrow \eta\pi^+\pi^-$

$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_{16}\Gamma_{17}/\Gamma$

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.035$\pm$0.029	[43] BIZOT	80	DM1	e^+e^-

[43] Model dependent.

$\Gamma(\rho\pi\pi) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_3\Gamma_{17}/\Gamma$

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.510$\pm$0.090	[44] BIZOT	80	DM1	e^+e^-

[44] Model dependent.

$\rho(1700)$ $\Gamma(i)/\Gamma(\text{total}) \times \Gamma(e^+e^-)/\Gamma(\text{total})$

$\Gamma(\pi^0\omega)/\Gamma_{total} \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_{18}/\Gamma \times \Gamma_{17}/\Gamma$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.7 ± 0.4	7815	[45] ACHASOV	13	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$

[45] From a phenomenological model based on vector meson dominance with the interfering $\rho(1450)$ and $\rho(1700)$ and their widths fixed at 400 and 250 MeV, respectively. Systematic uncertainty not estimated.

$\rho(1700)$ BRANCHING RATIOS

$\Gamma(\rho\pi\pi)/\Gamma(4\pi)$ — Γ_3/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.28 ± 0.06	[46] ABELE	01B	CBAR	0.0 $\overline{p}n \to 5\pi$

[46] $\omega\pi$ not included.

$\Gamma(\rho^0\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-))$ — Γ_4/Γ_2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
~ 1.0		DELCOURT	81B	DM1	$e^+e^- \to 2(\pi^+\pi^-)$
$0.7\ \pm0.1$	500	SCHACHT	74	STRC	5.5–18 $\gamma p \to p4\pi$
0.80		[47] BINGHAM	72B	HBC	9.3 $\gamma p \to p4\pi$

[47] The $\pi\pi$ system is in S-wave.

$\Gamma(\rho^0\pi^0\pi^0)/\Gamma(\rho^\pm\pi^\mp\pi^0)$ — Γ_5/Γ_6

VALUE	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.10	ATKINSON	85B	OMEG		20–70 γp
<0.15	ATKINSON	82	OMEG	0	20–70 $\gamma p \to p4\pi$

$\Gamma(a_1(1260)\pi)/\Gamma(4\pi)$ — Γ_7/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.16 ± 0.05	[48] ABELE	01B	CBAR	0.0 $\overline{p}n \to 5\pi$

[48] $\omega\pi$ not included.

$\Gamma(h_1(1170)\pi)/\Gamma(4\pi)$ — Γ_8/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.17 ± 0.06	[49] ABELE	01B	CBAR	0.0 $\overline{p}n \to 5\pi$

[49] $\omega\pi$ not included.

$\Gamma(\pi(1300)\pi)/\Gamma(4\pi)$ — Γ_9/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.30 ± 0.10	[50] ABELE	01B	CBAR	$0.0\ \overline{p}n \rightarrow 5\pi$

[50] $\omega\pi$ not included.

$\Gamma(\rho\rho)/\Gamma(4\pi)$ — Γ_{10}/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.09 ± 0.03	[51] ABELE	01B	CBAR	$0.0\ \overline{p}n \rightarrow 5\pi$

[51] $\omega\pi$ not included.

$\Gamma(\pi^+\pi^-)/\Gamma_{total}$ — Γ_{11}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.287^{+0.043}_{-0.042}$	BECKER	79	ASPK	$17\ \pi^- p$ polarized
0.15 to 0.30	[52] MARTIN	78C	RVUE	$17\ \pi^- p \rightarrow \pi^+\pi^- n$
<0.20	[53] COSTA...	77B	RVUE	$e^+e^- \rightarrow 2\pi,\ 4\pi$
$0.30\ \pm0.05$	[52] FROGGATT	77	RVUE	$17\ \pi^- p \rightarrow \pi^+\pi^- n$
<0.15	[54] EISENBERG	73	HBC	$5\ \pi^+ p \rightarrow \Delta^{++} 2\pi$
$0.25\ \pm0.05$	[55] HYAMS	73	ASPK	$17\ \pi^- p \rightarrow \pi^+\pi^- n$

[52] From phase shift analysis of HYAMS 73 data.
[53] Estimate using unitarity, time reversal invariance, Breit-Wigner.
[54] Estimated using one-pion-exchange model.
[55] Included in BECKER 79 analysis.

$\Gamma(\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-))$ — Γ_{11}/Γ_2

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.13 ± 0.05	ASTON	80	OMEG	20–70 $\gamma p \rightarrow p 2\pi$
<0.14	[56] DAVIER	73	STRC	6–18 $\gamma p \rightarrow p 4\pi$
<0.2	[57] BINGHAM	72B	HBC	9.3 $\gamma p \rightarrow p 2\pi$

[56] Upper limit is estimate.
[57] 2σ upper limit.

$\Gamma(\pi\pi)/\Gamma(4\pi)$ — Γ_{12}/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.16 ± 0.04	[58,59] ABELE	01B	CBAR	$0.0\ \overline{p}n \rightarrow 5\pi$

[58] Using ABELE 97.
[59] $\omega\pi$ not included.

$\Gamma(K\overline{K}^*(892)+\text{c.c.})/\Gamma_{total}$ — Γ_{13}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
possibly seen	COAN	04	CLEO	$\tau^- \rightarrow K^-\pi^- K^+\nu_\tau$

$\Gamma(K\overline{K}^*(892) + c.c.)/\Gamma(2(\pi^+\pi^-))$ — Γ_{13}/Γ_2

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.15 ± 0.03	[60] DELCOURT 81B	DM1	$e^+e^- \to \overline{K}K\pi$

[60] Assuming $\rho(1700)$ and ω radial excitations to be degenerate in mass.

$\Gamma(\eta\rho)/\Gamma_{total}$ — Γ_{14}/Γ

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
possibly seen		AKHMETSHIN 00D	CMD2	$e^+e^- \to \eta\pi^+\pi^-$
<0.04		DONNACHIE 87B	RVUE	
<0.02	58	ATKINSON 86B	OMEG	20–70 γp

$\Gamma(\eta\rho)/\Gamma(2(\pi^+\pi^-))$ — Γ_{14}/Γ_2

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.123 ± 0.027	DELCOURT 82	DM1	$e^+e^- \to \pi^+\pi^-$ MM
~ 0.1	ASTON 80	OMEG	20–70 γp

$\Gamma(\pi^+\pi^-\text{ neutrals})/\Gamma(2(\pi^+\pi^-))$ — $(\Gamma_5+\Gamma_6+0.714\Gamma_{14})/\Gamma_2$

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
2.6 ± 0.4	[61] BALLAM 74	HBC	9.3 γp

[61] Upper limit. Background not subtracted.

$\Gamma(a_2(1320)\pi)/\Gamma_{total}$ — Γ_{15}/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
not seen	AMELIN 00	VES	37 $\pi^- p \to \eta\pi^+\pi^- n$

$\Gamma(K\overline{K})/\Gamma(2(\pi^+\pi^-))$ — Γ_{16}/Γ_2

VALUE	CL%	DOCUMENT ID	TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.015 ± 0.010		[62] DELCOURT 81B	DM1		$e^+e^- \to \overline{K}K$
<0.04	95	BINGHAM 72B	HBC	0	9.3 γp

[62] Assuming $\rho(1700)$ and ω radial excitations to be degenerate in mass.

$\Gamma(K\overline{K})/\Gamma(K\overline{K}^*(892) + c.c.)$ — Γ_{16}/Γ_{13}

VALUE	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
0.052 ± 0.026	BUON 82	DM1	$e^+e^- \to$ hadrons

$\Gamma(\pi^0\omega)/\Gamma_{total}$ — Γ_{18}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
not seen		MATVIENKO	15	BELL	$\overline{B}^0 \to D^{*+}\omega\pi^-$
seen	1.6k	ACHASOV	12	SND	$e^+e^- \to \pi^0\pi^0\gamma$
not seen	2382	AKHMETSHIN	03B	CMD2	$e^+e \to \pi^0\pi^0\gamma$
seen		ACHASOV	97	RVUE	$e^+e^- \to \omega\pi^0$

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