$\rho(1700)$

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

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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 $\gamma p \rightarrow p 2\pi$
1600 ± 10		[9] ATIYA	79B	SPEC	50 $\gamma C \rightarrow C 2\pi$
$1598 ^{+24}_{-22}$		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 $\rho-\omega$ 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)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1550 to 1620	[11] ACHASOV	00I	SND	$e^+e^- \to \pi^0\pi^0\gamma$
1580 to 1710	[12] ACHASOV	00I	SND	$e^+e^- \to \pi^0\pi^0\gamma$
1710±90	ACHASOV	97	RVUE	$e^+e^- \to \omega\pi^0$

[11] 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.
[12] 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	[13] ABELE	99D	CBAR	±	0.0 $\overline{p}p \to K^+K^-\pi^0$
1582 ±36	1600	CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$

[13] 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		[14] CORDIER	82	DM1	$e^+e^- \to 2(\pi^+\pi^-)$
1520± 30		[15] ASTON	81E	OMEG	20–70 $\gamma p \to p4\pi$
1654± 25		[16] DIBIANCA	81	DBC	$\pi^+d \to pp2(\pi^+\pi^-)$
1666± 39		[14] BACCI	80	FRAG	$e^+e^- \to 2(\pi^+\pi^-)$
1780	34	KILLIAN	80	SPEC	11 $e^-p \to 2(\pi^+\pi^-)$
1500		[17] ATIYA	79B	SPEC	50 $\gamma C \to C4\pi^\pm$
1570± 60	65	[18] ALEXANDER	75	HBC	7.5 $\gamma p \to p4\pi$
1550± 60		[15] 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 $\gamma p \to p4\pi$

[14] Simple relativistic Breit-Wigner fit with model dependent width.
[15] Simple relativistic Breit-Wigner fit with constant width.
[16] One peak fit result.
[17] Parameters roughly estimated, not from a fit.
[18] 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	[19] FRABETTI	04	E687	$\gamma p \rightarrow 3\pi^+ 3\pi^- p$
1783 ± 15	CLEGG	90	RVUE	$e^+e^- \rightarrow 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$

[19] 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	$e^+e^- \rightarrow \eta\pi^+\pi^-$
282 ± 44	[20] FUKUI	88	SPEC	8.95 $\pi^- p \rightarrow \eta\pi^+\pi^- n$

[20] 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	[21] ABRAMOWICZ	12	ZEUS	$e p \rightarrow e\pi^+\pi^- p$
316 ± 26		[22] LEES	12G	BABR	$e^+e^- \rightarrow \pi^+\pi^-\gamma$
$164 \pm 21 {}^{+89}_{-26}$	5.4M	[23,24] FUJIKAWA	08	BELL	$\tau^- \rightarrow \pi^-\pi^0\nu_\tau$
275 ± 45		[25] ABELE	97	CBAR	$\overline{p} n \rightarrow \pi^-\pi^0\pi^0$
310 ± 40		[25] BERTIN	97C	OBLX	0.0 $\overline{p} p \rightarrow \pi^+\pi^-\pi^0$
400 ± 100		CLEGG	94	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
224 ± 22		BISELLO	89	DM2	$e^+e^- \rightarrow \pi^+\pi^-$
242.5 ± 163.0		DUBNICKA	89	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
620 ± 60		GESHKEN...	89	RVUE	
<315		[26] ERKAL	85	RVUE	20–70 $\gamma p \rightarrow \gamma\pi$
$280 {}^{+30}_{-80}$		ABE	84B	HYBR	20 $\gamma p \rightarrow \pi^+\pi^- p$

230 ± 80	[27] ASTON	80	OMEG	20–70 $\gamma p \to p 2\pi$
283 ± 14	[28] ATIYA	79B	SPEC	50 $\gamma C \to C 2\pi$
175 $^{+98}_{-53}$	BECKER	79	ASPK	17 $\pi^- p$ polarized
232 ± 34	[26] LANG	79	RVUE	
340	[26] MARTIN	78C	RVUE	17 $\pi^- p \to \pi^+ \pi^- n$
300 ±100	[26] FROGGATT	77	RVUE	17 $\pi^- p \to \pi^+ \pi^- n$
180 ± 50	[29] HYAMS	73	ASPK	17 $\pi^- p \to \pi^+ \pi^- n$

[21] Using the KUHN 90 parametrization of the pion form factor, neglecting ρ—ω interference.
[22] 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.
[23] $|F_\pi(0)|^2$ fixed to 1.
[24] From the GOUNARIS 68 parametrization of the pion form factor.
[25] T-matrix pole.
[26] From phase shift analysis of HYAMS 73 data.
[27] Simple relativistic Breit-Wigner fit with constant width.
[28] An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.
[29] 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	[30] ABELE	99D	CBAR	±	0.0 $\overline{p} p \to K^+ K^- \pi^0$
265 ±120	1600	CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$

[30] 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		[31] CORDIER	82	DM1	$e^+ e^- \to 2(\pi^+ \pi^-)$
400± 50		[32] ASTON	81E	OMEG	20–70 $\gamma p \to p 4\pi$
400±146		[33] DIBIANCA	81	DBC	$\pi^+ d \to p p 2(\pi^+ \pi^-)$
700±160		[31] BACCI	80	FRAG	$e^+ e^- \to 2(\pi^+ \pi^-)$
100	34	KILLIAN	80	SPEC	11 $e^- p \to 2(\pi^+ \pi^-)$
600		[34] ATIYA	79B	SPEC	50 $\gamma C \to C 4\pi^\pm$
340±160	65	[35] ALEXANDER	75	HBC	7.5 $\gamma p \to p 4\pi$
360±100		[32] CONVERSI	74	OSPK	$e^+ e^- \to 2(\pi^+ \pi^-)$
400±120	160	[36] SCHACHT	74	STRC	5.5–9 $\gamma p \to p 4\pi$
850±200	340	[36] SCHACHT	74	STRC	9–18 $\gamma p \to p 4\pi$
650±100	400	BINGHAM	72B	HBC	9.3 $\gamma p \to p 4\pi$

[31] Simple relativistic Breit-Wigner fit with model-dependent width.
[32] Simple relativistic Breit-Wigner fit with constant width.
[33] One peak fit result.
[34] Parameters roughly estimated, not from a fit.
[35] Skew mass distribution compensated by Ross-Stodolsky factor.
[36] 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	[37] ACHASOV	00I	SND	$e^+e^- \rightarrow \pi^0\pi^0\gamma$
490 to 1040	[38] ACHASOV	00I	SND	$e^+e^- \rightarrow \pi^0\pi^0\gamma$

[37] 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.

[38] 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	[39] FRABETTI	04	E687	$\gamma p \rightarrow 3\pi^+ 3\pi^- p$
285± 20	CLEGG	90	RVUE	$e^+e^- \rightarrow 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$

[39] 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.

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

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

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

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.13	[40] DIEKMAN	88	RVUE	$e^+e^- \to \pi^+\pi^-$
$0.029^{+0.016}_{-0.012}$	KURDADZE	83	OLYA	0.64–1.4 $e^+e^- \to \pi^+\pi^-$

[40] Using total width = 220 MeV.

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

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.305±0.071	[41] BIZOT	80	DM1	e^+e^-

[41] Model dependent.

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

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

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

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.035±0.029	[42] BIZOT	80	DM1	e^+e^-

[42] Model dependent.

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

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.510±0.090	[43] BIZOT	80	DM1	e^+e^-

[43] Model dependent.

$\rho(1700)$ 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	[44] ABELE	01B	CBAR	$0.0\ \overline{p}n \rightarrow 5\pi$

[44] $\omega\pi$ 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	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
$0.7\ \pm0.1$	500	SCHACHT	74	STRC	$5.5–18\ \gamma p \rightarrow p4\pi$
0.80		[45] BINGHAM	72B	HBC	$9.3\ \gamma p \rightarrow p4\pi$

[45] 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		$20–70\ \gamma p$
<0.15	ATKINSON	82	OMEG	0	$20–70\ \gamma p \rightarrow p4\pi$

$\Gamma(a_1(1260)\pi)/\Gamma(4\pi)$ — 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	[46] ABELE	01B	CBAR	$0.0\ \overline{p}n \rightarrow 5\pi$

[46] $\omega\pi$ 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	[47] ABELE	01B	CBAR	$0.0\ \overline{p}n \rightarrow 5\pi$

[47] $\omega\pi$ 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	[48] ABELE	01B	CBAR	$0.0\ \overline{p}n \rightarrow 5\pi$

[48] $\omega\pi$ 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	[49] ABELE	01B	CBAR	$0.0\ \overline{p}n \rightarrow 5\pi$

[49] $\omega\pi$ 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	[50] MARTIN	78C	RVUE	17 $\pi^- p \to \pi^+\pi^- n$
<0.20	[51] COSTA...	77B	RVUE	$e^+e^- \to 2\pi, 4\pi$
0.30 ±0.05	[50] FROGGATT	77	RVUE	17 $\pi^- p \to \pi^+\pi^- n$
<0.15	[52] EISENBERG	73	HBC	5 $\pi^+ p \to \Delta^{++} 2\pi$
0.25 ±0.05	[53] HYAMS	73	ASPK	17 $\pi^- p \to \pi^+\pi^- n$

[50] From phase shift analysis of HYAMS 73 data.
[51] Estimate using unitarity, time reversal invariance, Breit-Wigner.
[52] Estimated using one-pion-exchange model.
[53] 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 $\gamma p \to p 2\pi$
<0.14	[54] DAVIER	73	STRC	6–18 $\gamma p \to p 4\pi$
<0.2	[55] BINGHAM	72B	HBC	9.3 $\gamma p \to p 2\pi$

[54] Upper limit is estimate.
[55] 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	[56,57] ABELE	01B	CBAR	0.0 $\overline{p} n \to 5\pi$

[56] Using ABELE 97.
[57] $\omega\pi$ 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	$\tau^- \to K^-\pi^- K^+ \nu_\tau$

$\Gamma(K\overline{K}^*(892)+\text{c.c.})/\Gamma(2(\pi^+\pi^-))$ — 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	[58] DELCOURT	81B	DM1	$e^+e^- \to \overline{K} K \pi$

[58] 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

$\Gamma(\pi^+\pi^-$ 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	[59] BALLAM	74	HBC	9.3 γp

[59] 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		[60] DELCOURT	81B	DM1		$e^+e^- \to \overline{K}K$
<0.04	95	BINGHAM	72B	HBC	0	9.3 γp

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

$\Gamma(K\overline{K})/\Gamma(K\overline{K}^*(892)+\text{c.c.})$ 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. • • •					
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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ERKAL	85	ZPHY C29 485	C. Erkal, M.G. Olsson	(WISC)
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