$$\rho(1700)$$

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

See the review on "Spectroscopy of Light Meson Resonances."

$\rho(1700)$ MASS

$\eta \rho^0$ AND	$\pi^+\pi^-$	MODES
VALUE (MeV)		

DOCUMENT ID

1720 ± 20 OUR ESTIMATE

$\eta \rho^0$ MODE

VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENTThe 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. • • •

1834 ± 12	13.4k	¹ GRIBANOV	20	CMD3	1.1–2.0 $e^+e^- \rightarrow \eta \pi^+\pi^-$
1840 ± 10	7.4k	² ACHASOV	18	SND	1.22–2.00 $e^+e^- \rightarrow \eta \pi^+\pi^-$
1740 ± 20		ANTONELLI	88	DM2	$e^+e^- ightarrow \eta \pi^+\pi^-$
1701 ± 15		³ FUKUI	88	SPEC	$8.95 \ \pi^- p \rightarrow \eta \pi^+ \pi^- n$

¹ Mass and width of the ρ (770) fixed at 775 and 149 MeV, respectively; solution 2 of model 2, $\eta \rightarrow \gamma \gamma$ decays used.

² From the combined fit of AULCHENKO 15 and ACHASOV 18 in the model with the interfering $\rho(1450)$, $\rho(1700)$ and $\rho(2150)$ with the parameters of the $\rho(1450)$ and $\rho(1700)$ floating and the mass and width of the $\rho(2150)$ fixed at 2155 MeV and 320 MeV, respectively. The phases of the resonances are π , 0 and π , respectively.

³Assuming $\rho^+ f_0(1370)$ decay mode interferes with $a_1(1260)^+ \pi$ background. From a two Breit-Wigner fit.

$\pi\pi$ MODE

VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENTThe 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. • • •

1770.54 1718.50	± 5.49 ± 65.44) 1		¹ BARTOS ² BARTOS	17 17A	RVUE RVUE	$e^+e^- \rightarrow \pi^+\pi^-$ $e^+e^- \rightarrow \pi^+\pi^-$
1766.80	\pm 52.36	5		³ BARTOS	17A	RVUE	$\tau^- \rightarrow \pi^- \pi^0 \nu_{\tau}$
1644	± 36		20k	⁴ LEES	17C	BABR	$J/\psi \rightarrow \pi^+\pi^-\pi^0$
1780	± 20	$^{+15}_{-20}$	63.5k	⁵ ABRAMOWICZ	Z12	ZEUS	$ep \rightarrow e\pi^+\pi^-p$
1861	± 17			⁶ LEES	12G	BABR	$e^+e^- \rightarrow \pi^+\pi^-\gamma$
1728	± 17	± 89	5.4M	^{7,8} FUJIKAWA	08	BELL	$\tau^- \rightarrow \pi^- \pi^0 \nu_{\tau}$
1780	$^{+37}_{-29}$			⁹ ABELE	97	CBAR	$\overline{p}n \rightarrow \pi^{-}\pi^{0}\pi^{0}$
1719	± 15			⁹ BERTIN	97 C	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		¹⁰ ERKAL	85	RVUE	20–70 $\gamma p \rightarrow \gamma \pi$
1550	±70	ABE	84 B	HYBR	$20 \ \gamma p \rightarrow \ \pi^+ \pi^- p$
1590	± 20	¹¹ ASTON	80	OMEG	20–70 $\gamma p \rightarrow p 2\pi$
1600	± 10	¹² ATIYA	79 B	SPEC	50 $\gamma C \rightarrow C2\pi$
1598	+24 - 22	BECKER	79	ASPK	17 $\pi^- p$ polarized
1659	± 25	¹⁰ LANG	79	RVUE	
1575		¹⁰ MARTIN	78C	RVUE	$17 \pi^- p \rightarrow \pi^+ \pi^- r$
1610	± 30	¹⁰ FROGGATT	77	RVUE	$17 \pi^- p \rightarrow \pi^+ \pi^- r$
1590	± 20	¹³ HYAMS	73	ASPK	$17 \pi^- p \rightarrow \pi^+ \pi^- r$

 1 Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUB-NICKA 10 to analyze the data of LEES 12G and ABLIKIM 16C.

² Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUB-NICKA 10 to analyze the data of ACHASOV 06, AKHMETSHIN 07, AUBERT 09AS, and AMBROSINO 11A.

³Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUB-NICKA 10 to analyze the data of FUJIKAWA 08.

⁴ From a Dalitz plot analysis in an isobar model with $\rho(1450)$ and $\rho(1700)$ masses and widths floating.

⁵ Using the KUHN 90 parametrization of the pion form factor, neglecting $\rho-\omega$ interference.

⁶ 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.

 $|F_{\pi}(0)|^2$ fixed to 1.

⁸ From the GOUNARIS 68 parametrization of the pion form factor.

⁹T-matrix pole.

 10 From phase shift analysis of HYAMS 73 data.

¹¹Simple relativistic Breit-Wigner fit with constant width.

 12 An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.

¹³ Included in BECKER 79 analysis.

$\pi\omega$ MODE

VALUE (MeV)	EVIS	DOCUMENT ID		TECN	COMMENT
• • • We do r	not use the follo	owing data for a	verages	, fits, lin	nits, etc. • • •
$1723\pm~2$		¹ ACHASOV	23A	SND	$e^+e^- ightarrow \omega \pi^0$
1708 ± 41	7815	² ACHASOV	13	SND	1.05–2.00 $e^+e^- \to \pi^0 \pi^0 \gamma$
1550 to 1620		³ ACHASOV	001	SND	$e^+e^- \rightarrow \pi^0 \pi^0 \gamma$
1580 to 1710		⁴ ACHASOV	001	SND	$e^+e^- \rightarrow \pi^0 \pi^0 \gamma$
$1710\!\pm\!90$		ACHASOV	97	RVUE	$e^+e^- ightarrow\omega\pi^0$

 1 From a vector dominance fit to the Born cross section between 1.05 and 2.0 GeV with $\rho(770),~\rho(1570),~\rho(1700),~\rho(2150).$ The fit also uses SND data from the VEPP-2M collider below 1.02 GeV and from LEES 17H and ABLIKIM 21A above 1.5GeV.

² 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.

³ Taking into account both $\rho(1450)$ and $\rho(1700)$ contributions. Using the data of ACHASOV 001 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.

⁴ Taking into account the $\rho(1700)$ contribution only. Using the data of ACHASOV 001 on $e^+e^- \rightarrow \omega \pi^0$ and of EDWARDS 00A on $\tau^- \rightarrow \omega \pi^- \nu_{\tau}$.

KK MODE					
VALUE (MeV)	EVTS	DOCUMENT ID		TECN CHG	COMMENT
$\bullet \bullet \bullet$ We do not use	the follov	ving data for ave	rages,	fits, limits, et	C. ● ● ●
$1688.7 \pm 3.1 \substack{+141.1 \\ -1.3}$		¹ ALBRECHT	20	RVUE	$0.9 \overline{p} p \rightarrow K^+ K^- \pi^0$
1541 \pm 12 \pm 33	190k	² AAIJ	16N	LHCB	$D^0 \rightarrow \kappa^0_S \kappa^{\pm} \pi^{\mp}$
1740.8 ± 22.2	27k	³ ABELE	99 D	CBAR \pm	$0.0 \ \overline{p} p \rightarrow K^+ K^- \pi^0$
1582 ±36	1600	CLELAND	82 B	SPEC \pm	$50 \pi p \rightarrow K^0_S K^{\pm} p$

¹T-matrix pole, 2 poles, 3 channels, including $\pi\pi$ scattering data from HYAMS 75.

² Using the GOUNARIS 68 parameterization with a fixed width. Value is average using different $K\pi$ *S*-wave parametrizations in fit. ³ K-matrix pole. Isospin not determined, could be $\omega(1650)$ or $\phi(1680)$.

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the	e following	data for averages	s, fits,	limits, e	etc. • • •
$1851^{+}_{-}27_{-}24$		ACHASOV	97	RVUE	$e^+e^- ightarrow 2(\pi^+\pi^-)$
1570± 20		¹ CORDIER	82	DM1	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
$1520\pm~30$		² ASTON	81E	OMEG	20–70 $\gamma p \rightarrow p 4\pi$
$1654\pm~25$		³ DIBIANCA	81	DBC	$\pi^+ d \rightarrow pp2(\pi^+\pi^-)$
$1666\pm$ 39		¹ BACCI	80	FRAG	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
1780	34	KILLIAN	80	SPEC	$11 \ e^- p \rightarrow 2(\pi^+ \pi^-)$
1500		⁴ ATIYA	79 B	SPEC	50 $\gamma C \rightarrow C 4 \pi^{\pm}$
$1570\pm~60$	65	⁵ ALEXANDER	75	HBC	7.5 $\gamma p \rightarrow p 4\pi$
$1550\pm~60$		² CONVERSI	74	OSPK	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
$1550\pm~50$	160	SCHACHT	74	STRC	5.5–9 $\gamma p ightarrow p 4 \pi$
$1450\!\pm\!100$	340	SCHACHT	74	STRC	9–18 $\gamma {m p} ightarrow {m p} 4 \pi$
$1430\pm~50$	400	BINGHAM	72 B	HBC	9.3 $\gamma p \rightarrow p 4\pi$

¹Simple relativistic Breit-Wigner fit with model dependent width.

²Simple relativistic Breit-Wigner fit with constant width.

³One peak fit result.

2(-+-)MODE

⁴ Parameters roughly estimated, not from a fit.

⁵Skew 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 followin	ng data for averages	s, fits, limits,	etc. • • •	
1660 ± 30	ATKINSON	85B OMEG	5 20-70 γ <i>p</i>	

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use	the following data	for av	verages, f	fits, limits, etc. • • •
1730 ± 34	¹ FRABETTI	04	E687	$\gamma p \rightarrow 3\pi^+ 3\pi^- p$
1783 ± 15	CLEGG	90	RVUE	$e^+e^- \rightarrow 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$
1 France of the second beau		ا ماد		0

From a fit with two resonances with the JACOB 72 continuum.

$m_{ ho(1700)^0} - m_{ ho(1700)^\pm}$							
VALUE (MeV)	DOCUMENT ID) <u>TE</u>	<u>см со</u>	MMENT			
• • • We do not use the follow	ing data for averag	es, fits, lim	its, etc.	• • •			
-48.30 ± 83.81	¹ BARTOS	17A RV	′UE e ⁺	$e^- e^- \rightarrow \pi^+$	·π ⁻ ,		
				$\tau^- \rightarrow \pi^-$	$\pi^0 \nu_{\tau}$		
1 Applies the Unitary & Anal	ytic Model of the p	ion electror	nagnetic	c form facto	r of D		

DUB-NICKA 10 to analyze the data of ACHASOV 06, AKHMETSHIN 07, AUBERT 09AS, AMBROSINO 11A, and FUJIKAWA 08.

2 of

ρ(1700) WIDTH

		P()	=		
$\eta \rho^0 \text{ AND } \pi^-$ $\frac{VALUE (MeV)}{250 \pm 100 \text{ OUR}}$	$^+\pi^-$ MOE	DES <u>DOCUME</u>	NT ID		
$\eta \rho^0$ MODE VALUE (MeV) The data in the	<u>EVTS</u> is block is ir	DOCUMENT ID	age pr	<u>TECN</u> inted for	COMMENT a previous datablock.
• • • We do n	ot use the f	ollowing data for a	verage	es, fits, li	mits, etc. • • •
47 ± 19 132 ± 40 150 ± 30 282 ± 44	13.4k 7.4k	¹ GRIBANOV ² ACHASOV ANTONELLI ³ FUKUI	20 18 88 88	CMD3 SND DM2 SPEC	1.1-2.0 $e^+e^- \to \eta \pi^+\pi^-$ 1.22-2.00 $e^+e^- \to \eta \pi^+\pi^-$ $e^+e^- \to \eta \pi^+\pi^-$ 8.95 $\pi^-p \to \eta \pi^+\pi^-n$
 Mass and model 2, η From the orienterfering floating an respectively Assuming two Breit-W 	width of the $\rightarrow \gamma \gamma$ dec combined fit $\rho(1450), \rho(1$ and the mass y. The phase $\rho^+ f_0(1370)$ Nigner fit.	e $\rho(770)$ fixed at 7 ays used. c of AULCHENKO 1700) and $\rho(2150)$ v and width of the es of the resonance decay mode inter	775 an 15 ar vith th ho(21 s are feres	nd 149 M ne param 50) fixed π , 0 and with a_1 (MeV, respectively; solution 2 of ASOV 18 in the model with the eters of the $\rho(1450)$ and $\rho(1700)$ d at 2155 MeV and 320 MeV, π , respectively. 1260) ⁺ π background. From a
$\pi\pi$ MODE	-			-	

π

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
The data in this blo	ck is included ir	n the average printed	for a prev	vious datablock.

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

268.9	$8\pm$ 11.4	0		¹ BARTOS	17	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
489.5	$8\pm$ 16.9	5		² BARTOS	17A	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
414.7	1 ± 119.4	8		³ BARTOS	17A	RVUE	$\tau^- \rightarrow \pi^- \pi^0 \nu_{\tau}$
109	\pm 19		20k	⁴ LEES	17C	BABR	$J/\psi \rightarrow \pi^+\pi^-\pi^0$
310	\pm 30	$^{+25}_{-35}$	63.5k	⁵ ABRAMOWIC	Z12	ZEUS	$ep ightarrow e\pi^+\pi^-p$
316	\pm 26			⁶ LEES	12G	BABR	$e^+e^- \rightarrow \pi^+\pi^-\gamma$
164	\pm 21	$^{+89}_{-26}$	5.4M	^{7,8} FUJIKAWA	08	BELL	$\tau^- \rightarrow \ \pi^- \pi^0 \nu_\tau$
275	\pm 45			⁹ ABELE	97	CBAR	$\overline{p}n \rightarrow \pi^{-}\pi^{0}\pi^{0}$
310	\pm 40			⁹ BERTIN	97C	OBLX	$0.0 \ \overline{p} p \rightarrow \ \pi^{+} \pi^{-} \pi^{0}$
400	± 100			CLEGG	94	RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
224	\pm 22			BISELLO	89	DM2	$e^+e^- \rightarrow \pi^+\pi^-$
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	242.5 620	± 163.0 ± 60	DUBNICKA GESHKEN	89 89	RVUE RVUE	$e^+e^- \rightarrow \pi^+\pi^-$
<	<315		¹⁰ ERKAL	85	RVUE	20–70 $\gamma p \rightarrow \gamma \pi$
	280	+ 30 - 80	ABE	84 B	HYBR	$20 \ \gamma p \rightarrow \ \pi^+ \pi^- p$
	230	± 80	¹¹ ASTON	80	OMEG	20–70 $\gamma p \rightarrow p 2\pi$
	283	\pm 14	¹² ATIYA	79 B	SPEC	50 $\gamma C \rightarrow C 2\pi$
	175	+ 98 - 53	BECKER	79	ASPK	17 $\pi^- p$ polarized
	232	± 34	¹⁰ LANG	79	RVUE	
	340		¹⁰ MARTIN	78C	RVUE	$17 \pi^- p \rightarrow \pi^+ \pi^- n$
	300	± 100	¹⁰ FROGGATT	77	RVUE	$17 \pi^- p \rightarrow \pi^+ \pi^- n$
	180	\pm 50	¹³ HYAMS	73	ASPK	$17 \pi^- p \rightarrow \pi^+ \pi^- n$

 1 Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUB-NICKA 10 to analyze the data of LEES 12G and ABLIKIM 16C.

² Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUB-NICKA 10 to analyze the data of ACHASOV 06, AKHMETSHIN 07, AUBERT 09AS, and AMBROSINO 11A.

and AMBROSINO 11A. ³Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUB-NICKA 10 to analyze the data of FUJIKAWA 08.

⁴ From a Dalitz plot analysis in an isobar model with $\rho(1450)$ and $\rho(1700)$ masses and widths floating.

⁵ Using the KUHN 90 parametrization of the pion form factor, neglecting $\rho - \omega$ interference.

⁶ 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.

 $|F_{\pi}(0)|^2$ fixed to 1.

⁸ From the GOUNARIS 68 parametrization of the pion form factor.

⁹T-matrix pole.

 10 From phase shift analysis of HYAMS 73 data.

¹¹Simple relativistic Breit-Wigner fit with constant width.

 $^{12}\,{\rm An}$ additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape.

 13 Included in BECKER 79 analysis.

KK MODE

VALUE (MeV)	EVTS	DOCUMENT ID)	TECN CHG	COMMENT
• • • We do not use	the follov	ving data for ave	erages	, fits, limits, et	tc. ● ● ●
$150.9 \pm 2.5 {+60 \atop -10.6}$		¹ ALBRECHT	20	RVUE	$0.9 \ \overline{p} p \rightarrow \ K^+ K^- \pi^0$
187.2 ± 26.7	27k	² ABELE	99 D	CBAR \pm	$0.0 \ \overline{p} p \rightarrow \ K^+ K^- \pi^0$
265 ±120	1600	CLELAND	82 B	SPEC \pm	50 $\pi p \rightarrow K_c^0 K^{\pm} p$

 1 T-matrix pole, 2 poles, 3 channels, including $\pi\pi$ scattering data from HYAMS 75. 2 K-matrix pole. Isospin not determined, could be $\omega(1650)$ or $\phi(1680).$

2 ($\pi^+\pi^-$) MODE					
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$\bullet~\bullet~\bullet$ We do not use the	following	data for averages	s, fits,	limits, e	tc. ● ● ●
510± 40		¹ CORDIER	82	DM1	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
$400\pm$ 50		² ASTON	81E	OMEG	20–70 $\gamma p ightarrow p4\pi$
400 ± 146		³ DIBIANCA	81	DBC	$\pi^+ d \rightarrow pp2(\pi^+\pi^-)$
700 ± 160		¹ BACCI	80	FRAG	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
100	34	KILLIAN	80	SPEC	11 $e^- p \rightarrow 2(\pi^+ \pi^-)$
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Citation: S. Navas et al. (Particle Data Group), Phys. Rev. D 110, 030001 (2024)

600		⁴ ATIYA	79 B	SPEC	50 $\gamma C \rightarrow C 4 \pi^{\pm}$
340 ± 160	65	⁵ ALEXANDER	75	HBC	7.5 $\gamma p \rightarrow p 4\pi$
360 ± 100		² CONVERSI	74	OSPK	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
400 ± 120	160	⁶ SCHACHT	74	STRC	5.5–9 $\gamma p \rightarrow p 4\pi$
850 ± 200	340	⁶ SCHACHT	74	STRC	9–18 $\gamma p ightarrow p 4\pi$
650 ± 100	400	BINGHAM	72B	HBC	$9.3 \gamma p \rightarrow p 4\pi$

¹Simple relativistic Breit-Wigner fit with model-dependent width.

²Simple relativistic Breit-Wigner fit with constant width.

³One peak fit result.

⁴ Parameters roughly estimated, not from a fit.

 5 Skew mass distribution compensated by Ross-Stodolsky factor.

⁶Width 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	<u>COMMENT</u>
$\bullet \bullet \bullet$ We do not use the following	data for averages, fits	, limits, e	etc. ● ● ●
300±50	ATKINSON 85B	OMEG	20–70 γ <i>p</i>
$\omega \pi^0 \text{ MODE}_{VALUE (MeV)}$	DOCUMENT ID	TECN	COMMENT
\bullet \bullet \bullet We do not use the following	data for averages, fits	, limits, e	etc. • • •
371±3 350 to 580 490 to 1040	¹ ACHASOV 23A ² ACHASOV 001 ³ ACHASOV 001	SND SND SND	$e^+e^- \rightarrow \omega \pi^0$ $e^+e^- \rightarrow \pi^0 \pi^0 \gamma$ $e^+e^- \rightarrow \pi^0 \pi^0 \gamma$
¹ From a vector dominance fit to $\rho(770)$, $\rho(1570)$, $\rho(1700)$, $\rho(2$ collider below 1.02 GeV and from 2 Taking into account both $\rho(1)$	the Born cross section the Born cross section (150). The fit also us the LEES 17H and ABI (1450) and $\rho(1700)$ c	on betwee es SND LIKIM 21 ontributio	en 1.05 and 2.0 GeV with data from the VEPP-2M A above 1.5 GeV. ons. Using the data of

ACHASOV 001 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. ³ Taking into account the $\rho(1700)$ contribution only. Using the data of ACHASOV 001 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 av	verages, fits, limits, etc. • • •
$315\!\pm\!100$	¹ FRABETTI	04	$E687 \gamma \boldsymbol{\rho} \to \ 3\pi^+ 3\pi^- \boldsymbol{\rho}$
$285\pm~20$	CLEGG	90	RVUE $e^+e^- \rightarrow 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$
1 From a fit with tw	o resonances with	the J	JACOB 72 continuum.

$$\Gamma_{\rho(1700)^0} - \Gamma_{\rho(1700)^{\pm}}$$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
• • • We do not	use the following dat	a for averages,	fits, limits, etc. • • •
74.87±120.67	¹ BARTOS	17A RVUE	$e^+e^- \rightarrow \pi^+\pi^-, \tau^- \rightarrow \pi^-\pi^0 \nu_{\tau}$
¹ Applies the U NICKA 10 to AMBROSINO	nitary & Analytic Mo analyze the data of 11A, and FUJIKAWA	del of the pior ACHASOV 06 A 08.	electromagnetic form factor of DUB 6, AKHMETSHIN 07, AUBERT 09AS

	Mode	Fraction (Γ_i/Γ)
Г1	4π	
Γ ₂	$2(\pi^{+}\pi^{-})$	seen
Γ ₃	$\rho \pi \pi$	seen
Γ ₄	$\rho^0 \pi^+ \pi^-$	seen
Γ ₅	$\rho^0 \pi^0 \pi^0$	
Г ₆	$ ho^{\pm}\pi^{\mp}\pi^{0}$	seen
Γ ₇	$a_1(1260)\pi$	seen
Г ₈	$h_1(1170)\pi$	seen
Г9	$\pi(1300)\pi$	seen
Γ ₁₀	ho ho	seen
Γ_{11}	$\pi^+\pi^-$	seen
Γ_{12}	$\pi \pi$	seen
Γ ₁₃	$K\overline{K}^*(892)+$ c.c.	seen
Γ ₁₄	ηho	seen
Γ ₁₅	a <u>2(1</u> 320)π	not seen
Γ ₁₆	KK	seen
Γ_{17}	e ⁺ e ⁻	seen
Γ ₁₈	$\pi^0 \omega$	seen
Γ ₁₉	$\pi^{U}\gamma$	not seen
Г ₂₀	$f_0(1500)\gamma$	not seen

ρ (1700) DECAY MODES

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

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 channel₁ in e^+e^- annihilation.

$\Gamma(2(\pi^+\pi^-)) \times \Gamma($	$(e^+e^-)/\Gamma_{total}$				Γ ₂ Γ ₁₇ /Γ
VALUE (keV)	DOCUMENT IL	TECN	COMMENT		
$\bullet \bullet \bullet$ We do not use t	he following data for averag	es, fits,	limits, e	etc. • • •	
2.6 ± 0.2	DELCOURT	81 B	DM1	$e^+e^- \rightarrow$	$2(\pi^{+}\pi^{-})$
2.83 ± 0.42	BACCI	80	FRAG	$e^+e^- \rightarrow$	$2(\pi^{+}\pi^{-})$
$\Gamma(\pi^+\pi^-)$ × $\Gamma(e^+$	e)/Γ _{total}				Γ ₁₁ Γ ₁₇ /Γ
VALUE (keV)	DOCUMENT ID	TECI	<u>V CON</u>	IMENT	
$\bullet \bullet \bullet$ We do not use t	he following data for averag	es, fits,	limits, e	etc. • • •	
0.13	¹ DIEKMAN 88	RVL	JE e ⁺	$e^- \rightarrow \pi^+$	π^{-}
$0.029 \substack{+0.016 \\ -0.012}$	KURDADZE 83	OLY	′A 0.64	1−1.4 e ⁺ e ⁻	$ \rightarrow \pi^+\pi^-$
1					

¹Using total width = 220 MeV.

$I(KK^{*}(892) + c.c.) >$	₁₃ ₁₇ /				
• • • We do not use the f	following data for avera	wing data for averages, fits,			
0.305 ± 0.071	¹ BIZOT	80	DM1	e^+e^-	
1 Model dependent.					
$\Gamma(\eta \rho) \times \Gamma(e^+ e^-) / \Gamma_{\mu}$		TE			Г ₁₄ Г ₁₇ /Г
• • • We do not use the f	following data for avera	ages, fits,	limits,	etc. • • •	
$1.35 \pm 0.53 \pm 0.08$ 13.4k 84 ±26 ±4 7 ± 3	¹ GRIBANOV ² LEES ANTONELLI	20 CM 18 BA 88 DM	1D3 1.: BR e ⁺ 12 e ⁺	$\begin{array}{c} 1-2.0 \ e^+ \ e^- \\ \hline e^- \rightarrow \eta \pi^- \\ \hline e^- \rightarrow \eta \pi^- \end{array}$	$ \begin{array}{c} \rightarrow \eta \pi^+ \pi^- \\ + \pi^- \\ + \pi^- \end{array} $
² Mass and width of th model 2, $\eta \rightarrow \gamma \gamma$ dec ² Includes non-resonant o Model uncertainty is 8	e $\rho(770)$ fixed at 775 cays used. contribution. The selec 0%.	and 149 cted fit mo	MeV, odel incl	respectively; udes three $ ho$ e	solution 2 of excited states.
$\Gamma(\kappa \overline{\kappa}) \times \Gamma(e^+e^-)/$	e $\rho(770)$ fixed at 775 cays used. contribution. The selec 0%. Γ_{total}	and 149 cted fit mo	MeV,	respectively; udes three $ ho$ e	solution 2 of excited states. $\Gamma_{16}\Gamma_{17}/\Gamma$
$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/$ $VALUE (keV)$	e $\rho(770)$ fixed at 775 cays used. contribution. The selection Γ_{total}	and 149 cted fit mo <i>ID</i>	MeV, odel incl	respectively; udes three ρ e <u>COMMENT</u>	solution 2 of excited states. Γ ₁₆ Γ ₁₇ /Γ
$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/$ $VALUE (keV)$	e $\rho(770)$ fixed at 775 cays used. contribution. The selec 0%. F total <u>DOCUMENT</u> following data for avera	and 149 cted fit mo <u>ID</u> ages, fits,	MeV, odel incl <u>TECN</u> limits,	respectively; udes three ρ e $\underline{COMMENT}$ etc. • • •	solution 2 of excited states. Γ ₁₆ Γ ₁₇ /Γ
$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/V^{ALUE (keV)}$ ••• We do not use the following t	e $ ho(770)$ fixed at 775 cays used. contribution. The select 0%. F total <u>DOCUMENT</u> following data for avers ¹ BIZOT	and 149 cted fit mo <i>ID</i> ages, fits, 80	MeV, odel incl <u>TECN</u> limits, DM1	respectively; udes three ρ e $\frac{COMMENT}{etc. \bullet \bullet}$ e^+e^-	solution 2 of excited states. Γ ₁₆ Γ ₁₇ /Γ
$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/$ $\frac{VALUE (keV)}{V}$ $\frac{VALUE (keV)}{V}$	e $ ho(770)$ fixed at 775 cays used. contribution. The select 0%. Γ_{total} <u>DOCUMENT</u> following data for avera ¹ BIZOT	and 149 cted fit mo <u>ID</u> ages, fits, 80	MeV, odel incloadel incloa	respectively; udes three ρ e $\frac{COMMENT}{etc. \bullet \bullet \bullet}$ e^+e^-	solution 2 of excited states. Γ₁₆Γ₁₇/Γ
$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/$ $\Gamma(\rho\pi\pi) \times \Gamma(e^+e^-)/$ $\Gamma(\rho\pi\pi) \times \Gamma(e^+e^-)/$	e $\rho(770)$ fixed at 775 cays used. contribution. The select 0%. F total <u>DOCUMENT</u> following data for avera ¹ BIZOT	and 149 cted fit mo <i>ID</i> ages, fits, 80	MeV, odel incl <u>TECN</u> limits, DM1	respectively; udes three ρ e $\frac{COMMENT}{e^+e^-}$	solution 2 of excited states. $\Gamma_{16}\Gamma_{17}/\Gamma$ $\Gamma_{3}\Gamma_{17}/\Gamma$
$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/$ $\frac{VALUE (keV)}{VALUE (keV)}$ $\Gamma(e^+e^-)/VALUE (keV)$ $\Gamma(e^+e^-)/VALUE (keV)$ $\Gamma(e^+e^-)/VALUE (keV)$ $\Gamma(e^+e^-)/VALUE (keV)$	e $\rho(770)$ fixed at 775 cays used. contribution. The select 0%. Γ_{total} following data for avera 1 BIZOT Γ_{total}	and 149 cted fit mo <u>ID</u> ages, fits, 80 <u>ID</u>	MeV, odel incloaded incloa	respectively; udes three ρ e $\frac{COMMENT}{e^+e^-}$ $\frac{COMMENT}{e^+e^-}$	solution 2 of excited states. F 16 F 17/ F F 3 F 17/ F
$\Gamma(K\overline{K}) \times \Gamma(e^+e^-)/$ $\frac{VALUE (keV)}{VALUE (keV)}$ ••• We do not use the formula of the fore	e ρ(770) fixed at 775 cays used. contribution. The selec 0%.	and 149 cted fit mo <u>ID</u> ages, fits, 80 <u>ID</u> ages, fits, 00	MeV, odel incload del incload limits, DM1	respectively; udes three ρ e $\frac{COMMENT}{e^+e^-}$ etc. • • • $\frac{COMMENT}{e^+e^-}$	solution 2 of excited states. F₁₆F₁₇/F F₃F₁₇/F

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

$\Gamma(\pi^0\omega)/\Gamma_{\rm tot}$	$_{al} \times \Gamma(e^+$	$e^{-})/\Gamma_{total}$			$\Gamma_{18}/\Gamma imes \Gamma_{17}/\Gamma$
VALUE (units 10 ⁻⁰	⁶) EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do n	ot use the fo	llowing data for a	verages	, fits, li	mits, etc. • • •
0.09 ± 0.05	10.2k	¹ ACHASOV	16 D	SND	1.05–2.00 $e^+e^- \rightarrow \pi^0 \pi^0 \gamma$
$1.7\ \pm 0.4$	7815	² ACHASOV	13	SND	1.05–2.00 $e^+e^- \rightarrow \pi^0 \pi^0 \gamma$
1 From a ph	onomonologi	cal model based	on voc	tor mor	son dominance with interfering

¹ From a phenomenological model based on vector meson dominance with interfering $\rho(700)$, $\rho(1450)$, and $\rho(1700)$. The $\rho(1700)$ mass and width are fixed at 1720 MeV and 250 MeV, respectively. Systematic uncertainty not estimated. Supersedes ACHASOV 13. ² 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.

$\Gamma(\eta ho)/\Gamma_{ m total}$ $ imes$ $\Gamma(e^+e^-)/E$	Г _{total}			Γ ₁₄ /	′Γ × Γ ₁₇ /Γ
VALUE (units 10^{-8}) EVTS D	OCUMENT ID	TECN	COM	<i>MENT</i>	
• • • We do not use the following	ng data for aver	ages, fits,	limits, e	etc. • • •	
$8.3^{+3.8}_{-3.1}$ 7.4k ¹ A	CHASOV 18	8 SND	1.22-	-2.00 e ⁺ e ⁻	$\rightarrow \eta \pi^+ \pi^-$
¹ From the combined fit of Al interfering $\rho(1450)$, $\rho(1700)$ a floating and the mass and respectively. The phases of t	ULCHENKO 15 and ρ (2150) with width of the ρ (he resonances an	and ACH the para 2150) fix re π , 0 an	HASOV meters o red at 2 rd π , res	18 in the mo f the ρ (1450) 155 MeV an pectively.	del with the and $ ho(1700)$ d 320 MeV,
ρ(17	00) BRANCH	ING RA	TIOS		
$\Gamma(\rho\pi\pi)/\Gamma(4\pi)$	DOCUMENT	חו	TECN	COMMENT	Γ_3/Γ_1
• • • We do not use the following	ng data for aver	ages. fits.	limits.	etc. • • •	
0.28±0.06	¹ ABELE	01B	CBAR	$0.0 \ \overline{p} n \rightarrow 0.0 $	5π
${}^1\omega\pi$ not included.					
$\frac{\Gamma(\rho^0\pi^+\pi^-)}{\Gamma(2(\pi^+\pi^-))}$	DOCUMENT	ID	<u>TECN</u>	<u>COMMENT</u>	Γ ₄ /Γ ₂
• • • We do not use the following	ng data for aver	ages, fits,	limits, e	etc. • • •	
~ 1.0 0.7 ± 0.1 500 0.80 1 The $\pi\pi$ system is in <i>S</i> -wave.	DELCOUR SCHACHT ¹ BINGHAM	Т 81в 74 72в	DM1 STRC HBC	$e^+e^- \rightarrow 1$ 5.5–18 γp – 9.3 $\gamma p \rightarrow 1$	$2(\pi^+\pi^-)$ $\rightarrow p4\pi$ $p4\pi$
$\frac{\Gamma(\rho^0 \pi^0 \pi^0)}{\Gamma(\rho^{\pm} \pi^{\mp} \pi^0)}$	DOCUMENT ID	TE	ECN CI	HG COMMEN	Γ5/Γ6
• • • We do not use the following	ng data for aver	ages, fits,	limits, e	etc. • • •	
<0.10	ATKINSON	85b O	MEG	20–70 γ	p
<0.15	ATKINSON	82 O	MEG 0	20–70 γ	$p \rightarrow p 4\pi$
Γ(a₁(1260)π)/Γ(4π) VALUE	DOCUMENT	ID	<u>TECN</u>	<u>COMMENT</u>	Γ_7/Γ_1
• • • We do not use the following	ng data for aver	ages, fits,	limits, e	etc. • • •	
0.16 ± 0.05	¹ ABELE	01 B	CBAR	$0.0 \ \overline{p} n \rightarrow$	5π
${}^{1}\omega\pi$ not included.					
Γ(h₁(1170)π)/Γ(4π) VALUE	DOCUMENT	ID	<u>TECN</u>	<u>COMMENT</u>	Γ ₈ /Γ ₁
• • • We do not use the following	ng data for aver	ages, fits,	limits, e	etc. • • •	
0.17±0.06	¹ ABELE	01 B	CBAR	$0.0 \ \overline{p} n \rightarrow 0.0 $	5π
$1_{\omega\pi}$ not included.					

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$\Gamma(\pi(1300)\pi)/\Gamma(4\pi)$						Γ_9/Γ_1
VALUE	DOCUMENT IL)	TECN	COMMENT		
$\bullet \bullet \bullet$ We do not use the fol	lowing data for averag	ges, fits,	limits, e	etc. • • •		
0.30 ± 0.10	¹ ABELE	01 B	CBAR	$0.0 \ \overline{p} n \rightarrow$	5π	
$^1\omega\pi$ not included.						
$\Gamma(ho ho)/\Gamma(4\pi)$						Г ₁₀ /Г ₁
VALUE	DOCUMENT IL)	TECN	<u>COMMENT</u>		
\bullet \bullet We do not use the following	lowing data for averag	ges, fits,	limits, e	etc. • • •		
0.09 ± 0.03	¹ ABELE	01 B	CBAR	$0.0 \ \overline{p} n \rightarrow$	5π	
$^1\omega\pi$ not included.						
$\Gamma(\pi^+\pi^-)/\Gamma_{total}$						Г ₁₁ /Г
VALUE	DOCUMENT IL)	TECN	COMMENT		

•	$\bullet~\bullet~$ We do not use the following	data for averages	, fits,	limits, e	etc. ● ● ●
	$0.108 \!\pm\! 0.017 \!+\! 0.162 \!-\! 0.004$	¹ ALBRECHT	20	RVUE	$0.9 \overline{p} p \rightarrow \ K^+ K^- \pi^0$
	$0.287 \substack{+ 0.043 \\ - 0.042}$	BECKER	79	ASPK	17 $\pi^- p$ polarized
	0.15 to 0.30	² MARTIN	78 C	RVUE	$17 \pi^- p \rightarrow \pi^+ \pi^- n$

³ COSTA... 77B RVUE $e^+e^- \rightarrow 2\pi$, 4π < 0.20 $0.30\ \pm 0.05$ ² FROGGATT 77 RVUE 17 $\pi^- p \rightarrow \pi^+ \pi^- n$ $5 \pi^+ p \rightarrow \Delta^{++} 2\pi$ ⁴ EISENBERG 73 HBC < 0.15 ⁵ HYAMS 73 ASPK 17 $\pi^- p \rightarrow \pi^+ \pi^- n$ 0.25 ± 0.05

 1 Residue from T-matrix pole, 2 poles, 3 channels, Chew-Mandelstam functions and simplified analytic continuation for the 4π channel. Includes scattering data from HYAMS 75 and model-independent calculation of GARCIA-MARTIN 11A.

 2 From phase shift analysis of HYAMS 73 data.

³Estimate using unitarity, time reversal invariance, Breit-Wigner.

⁴Estimated using one-pion-exchange model.

⁵ Included in BECKER 79 analysis.

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

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$\Gamma(K\overline{K})/\Gamma_{\text{total}}$					Г ₁₆ /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
$\bullet \bullet \bullet$ We do not use the following	ing data for average	s, fits,	limits, e	etc. • • •	
$0.007 \!\pm\! 0.006 \!+\! 0.041 \\ -\! 0.002$	¹ ALBRECHT	20	RVUE	$0.9 \ \overline{p} p \rightarrow$	$K^+ K^- \pi^0$

¹Residue from T-matrix pole, 2 poles, 3 channels, Chew-Mandelstam functions and simplified analytic continuation for the 4π channel. Includes scattering data from HYAMS 75 and model-independent calculation of GARCIA-MARTIN 11A.

$\Gamma(\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-))$				Г ₁₁	/Γ2
VALUE	DOCUMENT ID		TECN	COMMENT	
• • • We do not use the follo	owing data for average	es, fits,	limits, e	etc. • • •	
0.13 ± 0.05 <0.14 <0.2 1 Upper limit is estimate. $^{2}2\sigma$ upper limit.	ASTON ¹ DAVIER ² BINGHAM	80 73 72в	OMEG STRC HBC	$20-70 \gamma p \rightarrow p2\pi$ $6-18 \gamma p \rightarrow p4\pi$ $9.3 \gamma p \rightarrow p2\pi$	

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$\Gamma(\pi\pi)/\Gamma(4\pi)$	DOCUMENT ID	TECN	COMMENT	Γ_{12}/Γ_1
• • • We do not use the follo	wing data for averages,	fits, limits,	etc. • • •	
0.16 ± 0.04 ¹ Using ABELE 97. ² um not included	^{1,2} ABELE	01B CBAR	$0.0 \ \overline{p} \ n \rightarrow$	5π
$\Gamma(KK^*(892) + c.c.)/\Gamma_{tot}$	al			Г ₁₃ /Г
VALUE	<u>DOCUMENT ID</u>	fits limits	etc	
nossibly seen	COAN	04 CLEO	$\tau^- \rightarrow K^-$	$-\pi - \kappa + \mu$
		04 CLLO		π Γ ν τ
$\Gamma(KK^*(892) + c.c.)/\Gamma(2)$	$(\pi^{+}\pi^{-}))$			Γ_{13}/Γ_2
VALUE	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
• • • We do not use the folic	1 DELCOUDT	fits, limits,	etc. • • • • $+ -$	
0.15 ± 0.03		81B DMI	$e \cdot e \rightarrow$.	ΚΚπ
- Assuming $ ho(1700)$ and ω	radial excitations to be	degenerate	in mass.	
$\Gamma(\eta \rho) / \Gamma_{\text{total}}$				Г ₁₄ /Г
VALUE CL%	DOCUMENT ID	TECN	COMMENT	
• • • We do not use the follo	owing data for averages,	fits, limits,	etc. • • •	I
possibly seen	AKHMETSHIN	00D CMD2	$2 e^+e^- \rightarrow$	$\eta \pi^+ \pi^-$
< 0.04	ATKINSON	878 RVUE 868 OME	: G 20-70 γ μ	
			3 20 10 /p	
$\Gamma(\eta ho)/\Gamma(2(\pi^+\pi^-))$				Γ ₁₄ /Γ ₂
VALUE	<u>DOCUMENT ID</u>	<u></u>	<u>COMMENT</u>	
• • • We do not use the folic	wing data for averages,	fits, limits,	etc. • • • • $+$ $-$	+
0.123 ± 0.027		82 DMT 80 OME($e \cdot e \rightarrow 3$	π ' π MIM
(), I		OU OWE	3 20 10 ₁ p	
$\Gamma(\pi^+\pi^- \text{ neutrals})/\Gamma(2(\pi^+\pi^-))$	$(+\pi^{-}))$		(Γ ₅ +Γ ₆ +0.	714Г ₁₄)/Г ₂
VALUE	<u>DOCUMENT ID</u>	<u>TECN</u>	COMMENT	
• • • Vve do not use the folic	1 DALLARA	tits, limits,	etc. • • •	
2.0±0.4		74 HBC	9.3 γp	
- Opper limit. Background	not subtracted.			
$\Gamma(a_2(1320)\pi)/\Gamma_{total}$				Г ₁₅ /Г
VALUE	<u>DOCUMENT ID</u>	<u>TECN</u>	COMMENT	
• • • We do not use the folic	owing data for averages,	fits, limits,	etc. ● ● ●	1
not seen	AMELIN	00 VES	37 π ⁻ p -	$\rightarrow \eta \pi^+ \pi^- n$
$\frac{\Gamma(K\overline{K})}{\Gamma(2(\pi^{+}\pi^{-}))}$	DOCUMENT ID	TECN	CHG COM	Г₁₆/Г 2
• • • We do not use the follo	wing data for averages,	fits, limits,	etc. • • •	
0.015 ± 0.010	¹ DELCOURT	81B DM1	e^+e^-	$e^- \rightarrow \overline{K}K$
< 0.04 95	BINGHAM	72B HBC	0 9.3	γ p
1 Assuming $ ho($ 1700 $)$ and ω	radial excitations to be	degenerate	in mass.	
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$\Gamma(K\overline{K})/\Gamma(K\overline{K}^*(8$	92)+c.c.)					Г ₁₆ /Г ₁₃
VALUE		DOCUMENT ID		TECN	<u>COMMENT</u>	
$\bullet \bullet \bullet$ We do not use	the following	data for average	s, fits,	limits,	etc. • • •	
$0.052\!\pm\!0.026$		BUON	82	DM1	$e^+e^- \rightarrow$	hadrons
$\Gamma(\pi^0\omega)/\Gamma_{ m total}$						Г ₁₈ /Г
VALUE	EVTS	DOCUMENT ID		TECN	COMMENT	
\bullet \bullet \bullet We do not use	the following	data for average	s, fits,	limits,	etc. • • •	
not seen		MATVIENKO	15	BELL	$\overline{B}^0 \rightarrow D^*$	$+\omega\pi^{-}$
seen	1.6k	ACHASOV	12	SND	$e^+e^- ightarrow$	$\pi^0 \pi^0 \gamma$
not seen	2382	AKHMETSHII	V 03 B	CMD2	$e^+e \rightarrow \pi$	$0 \pi^0 \gamma$
seen		ACHASOV	97	RVUE	$e^+e^- \rightarrow$	$\omega \pi^0$
$\Gamma(\pi^0\gamma)/\Gamma_{ ext{total}}$						Г ₁₉ /Г
VALUE	<u>D</u> (DCUMENT ID	TE	<u>CN CO</u>	MMENT	
not seen	¹ A0	CHASOV 10	d SN	D 1.0	$75-2.0 \ e^+ e^-$	$e^- \rightarrow \pi^0 \gamma$
¹ From a fit of a $\sqrt{1700}$ MaV to	/MD model w	ith two effective	e resor	nances v	with masses (1450)	of 1450 MeV

and 1700 MeV to describe the excited vector states $\omega(1420)$, $\rho(1450)$, $\omega(1650)$, and $\rho(1700)$. The width of the highest mass effective resonance is fixed at 315 MeV.

$\Gamma(f_0(1500)\gamma)/\Gamma_{total}$				Г ₂₀ /Г	
VALUE	DOCUMENT ID		TECN	COMMENT	
not seen	1 ACHASOV	22	SND	1.17–2.00 $e^+e^- \rightarrow \eta \eta \gamma$	
¹ The 90% CL upper limit on the Born cross sections $\sigma(e^+e^- \rightarrow \phi(1680) \rightarrow f'(1525) \sigma \rightarrow mec)$ and $\sigma(e^+e^- \rightarrow \phi(1700) \rightarrow f'(1500) \sigma \rightarrow mec)$ is 10.6 ph					
$r_2(1525)\gamma \rightarrow \eta\eta\gamma$) and $\sigma($	$e e \rightarrow \rho(1/0)$	$(0) \rightarrow$	10(1200	$J(\gamma \rightarrow \eta \eta \gamma)$ is 10.0 pb.	

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FRABE I11 04 PL B578 290 PL. Frabetti et al. (FNAL E687 Collab.) ARHMETSHIN 038 PL B578 290 PL. Frabetti et al. (Novosibirsk CMD-2 Collab.) ACHASOV 00 PL B486 29 M.N. Achasov et al. (Novosibirsk CMD-2 Collab.) AKHMETSHIN 000 PL B486 29 R.R. Akhmetshin et al. (Novosibirsk CMD-2 Collab.) AKHMETSHIN 000 PL B486 178 A. Abele et al. (CtSC Collab.) BEDE 97 PL B391 191 A. Abele et al. (Crystal Barrel Collab.) ABELE 97 PL B391 676 A. Bertin et al. (CMCK Collab.) ACHASOV 74 CE2 A. Betti et al. (Crystal Barrel Collab.) ACHASOV 74 CE4 ASS A. Betti et al. (MOVM) BERTIN 97 PL B202 321 D. Biekmann (MMR) (MMR) DUBNICKA 89 JP G15 1349 S. Dubunkca et al. (DMZ Collab.) DUBNICKA 89 ZPHY C45 351 M. Atomson et al. (BONN, CKKN, GLAS+) ANTONELLI	COAN	04	PRL 92 232001	T.E. Coan <i>et al.</i>	(CLEO Collab.)
AKHME ISHIN 038 PL B562 173 R.R. Akhmetshin et al. (Novosibirsk CMD-2 Collab.) ACHASOV 001 PL B486 29 M.N. Achasov et al. (Novosibirsk CMD-2 Collab.) AKHMETSHIN 000 PL B489 125 R.R. Akhmetshin et al. (Novosibirsk CMD-2 Collab.) AMELE 900 PL B466 178 A. Abele et al. (Crystal Barrel Collab.) AREELE 900 PL B466 178 A. Abele et al. (Crystal Barrel Collab.) ACHASOV 97 PR D55 2663 N.N. Achasov et al. (MOVM) BERTIN 97C PL B408 476 A. Bette et al. (Crystal Barrel Collab.) ACHASOV 97 PR D55 2663 N.N. Achasov et al. (MOVM) BERTIN 97C PL B408 476 A. Betegg, A. Donnachie (LANC, MCHS) CLEEG 90 ZPHY C62 455 A. B. Clegg, A. Donnachie (LANC, MCHS) DUBNICKA 9 ZPHY C48 445 J.H. Kuhn et al. (DMZ Collab.) DUBNICKA 89 JP G15 1349 S. Dubinks et al. (DMX, Collab.) DIBNACA 8	FRABETTI	04	PL B578 290	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)
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