NODE=M065

$\rho(1700)$

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

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

NODE=M065

$\rho(1700)$ MASS

NODE=M065205

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

NODE=M065M0
NODE=M065M0

VALUE (MeV)	DOCUMENT ID
1720±20 OUR ESTIMATE	

→ UNCHECKED ←

$\eta\rho^0$ MODE

NODE=M065M6
NODE=M065M6

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. • • •

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1834±12	13.4k	[1] GRIBANOV	20	CMD3	1.1–2.0 $e^+e^- \to \eta\pi^+\pi^-$
1840±10	7.4k	[2] ACHASOV	18	SND	1.22–2.00 $e^+e^- \to \eta\pi^+\pi^-$
1740±20		ANTONELLI	88	DM2	$e^+e^- \to \eta\pi^+\pi^-$
1701±15		[3] FUKUI	88	SPEC	8.95 $\pi^- p \to \eta\pi^+\pi^- n$

[1] Mass and width of the $\rho(770)$ fixed at 775 and 149 MeV, respectively; solution 2 of model 2, $\eta \to \gamma\gamma$ decays used. NODE=M065M6;LINKAGE=B

[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. NODE=M065M6;LINKAGE=A

[3] Assuming $\rho^+ f_0(1370)$ decay mode interferes with $a_1(1260)^+\pi$ background. From a two Breit-Wigner fit. NODE=M065M;LINKAGE=B

$\pi\pi$ MODE

NODE=M065M1
NODE=M065M1

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. • • •

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1790 ±20		[1] AAIJ	25AG	LHCB	5 TeV PbPb → PbPb$\pi^+\pi^-$
1604.66±30.8	34M	[2] IGNATOV	24	CMD3	$e^+e^- \to \pi^+\pi^-$
1725 ±17		[3] ACHARYA	20F	ALCE	5 TeV PbPb → PbPb$\pi^+\pi^-$
1770.54± 5.49		[4] BARTOS	17	RVUE	$e^+e^- \to \pi^+\pi^-$
1718.50±65.44		[5] BARTOS	17A	RVUE	$e^+e^- \to \pi^+\pi^-$
1766.80±52.36		[6] BARTOS	17A	RVUE	$\tau^- \to \pi^-\pi^0\nu_\tau$
1644 ±36	20k	[7] LEES	17C	BABR	$J/\psi \to \pi^+\pi^-\pi^0$
1780 ±20 $^{+15}_{-20}$	63.5k	[8] ABRAMOWICZ	12	ZEUS	$ep \to e\pi^+\pi^- p$
1861 ±17		[9] LEES	12G	BABR	$e^+e^- \to \pi^+\pi^-\gamma$
1728 ±17 ±89	5.4M	[10,11] FUJIKAWA	08	BELL	$\tau^- \to \pi^-\pi^0\nu_\tau$
1780 $^{+37}_{-29}$		[12] ABELE	97	CBAR	$\overline{p}n \to \pi^-\pi^0\pi^0$
1719 ±15		[12] BERTIN	97C	OBLX	0.0 $\overline{p}p \to \pi^+\pi^-\pi^0$
1730 ±30		CLEGG	94	RVUE	$e^+e^- \to \pi^+\pi^-$
1768 ±21		BISELLO	89	DM2	$e^+e^- \to \pi^+\pi^-$
1745.7 ±91.9		DUBNICKA	89	RVUE	$e^+e^- \to \pi^+\pi^-$
1546 ±26		GESHKEN...	89	RVUE	
1650		[13] ERKAL	85	RVUE	20–70 $\gamma p \to \gamma\pi$
1550 ±70		ABE	84B	HYBR	20 $\gamma p \to \pi^+\pi^- p$
1590 ±20		[14] ASTON	80	OMEG	20–70 $\gamma p \to p 2\pi$
1600 ±10		[15] ATIYA	79B	SPEC	50 γC → C2π
1598 $^{+24}_{-22}$		BECKER	79	ASPK	17 $\pi^- p$ polarized
1659 ±25		[13] LANG	79	RVUE	
1575		[13] MARTIN	78C	RVUE	17 $\pi^- p \to \pi^+\pi^- n$
1610 ±30		[13] FROGGATT	77	RVUE	17 $\pi^- p \to \pi^+\pi^- n$
1590 ±20		[16] HYAMS	73	ASPK	17 $\pi^- p \to \pi^+\pi^- n$

OCCUR=2

[1] Using the parametrisation as in ANDREEV 20 with ρ-ω interference with the additional presence of two Breit-Wigner resonances for excited ρ states. NODE=M065M1;LINKAGE=G

[2] From a fit of the pion form factor using the GOUNARIS 68 parametrization with the complex phase of the $\rho-\omega$ interference leaving $\rho(1450)$, $\rho(1700)$ resonances as free parameters of the fit. The fit uses also data from CMD-2 and DM2 experiments. Systematic errors not estimated. NODE=M065M1;LINKAGE=F

[3] J^{PC} not determined, could be $\rho_3(1690)$. NODE=M065M1;LINKAGE=H

[4] Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUBNICKA 10 to analyze the data of LEES 12G and ABLIKIM 16C. NODE=M065M1;LINKAGE=C

[5] Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUBNICKA 10 to analyze the data of ACHASOV 06, AKHMETSHIN 07, AUBERT 09AS, and AMBROSINO 11A. NODE=M065M1;LINKAGE=D

[6] Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUBNICKA 10 to analyze the data of FUJIKAWA 08. NODE=M065M1;LINKAGE=E

[7] From a Dalitz plot analysis in an isobar model with $\rho(1450)$ and $\rho(1700)$ masses and widths floating. NODE=M065M1;LINKAGE=A

[8] Using the KUHN 90 parametrization of the pion form factor, neglecting $\rho-\omega$ interference. NODE=M065M1;LINKAGE=AB

[9] 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. NODE=M065M1;LINKAGE=LE

[10] $|F_\pi(0)|^2$ fixed to 1. NODE=M065M1;LINKAGE=FU

[11] From the GOUNARIS 68 parametrization of the pion form factor. NODE=M065M1;LINKAGE=GO

[12] T-matrix pole. NODE=M065M;LINKAGE=QQ

[13] From phase shift analysis of HYAMS 73 data. NODE=M065M;LINKAGE=P

[14] Simple relativistic Breit-Wigner fit with constant width. NODE=M065M;LINKAGE=M

[15] An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape. NODE=M065M;LINKAGE=R

[16] Included in BECKER 79 analysis. NODE=M065M;LINKAGE=H

$\pi\omega$ MODE

NODE=M065M8
NODE=M065M8

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1723± 2		[1] ACHASOV	23A	SND	$e^+e^- \to \omega\pi^0$
1708±41	7815	[2] ACHASOV	13	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$
1550 to 1620		[3] ACHASOV	00I	SND	$e^+e^- \to \pi^0\pi^0\gamma$
1580 to 1710		[4] ACHASOV	00I	SND	$e^+e^- \to \pi^0\pi^0\gamma$
1710±90		ACHASOV	97	RVUE	$e^+e^- \to \omega\pi^0$

OCCUR=2

[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. NODE=M065M8;LINKAGE=A

[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. NODE=M065M8;LINKAGE=AC

[3] 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. NODE=M065M;LINKAGE=I1

[4] 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 $\tau^- \to \omega\pi^-\nu_\tau$. NODE=M065M;LINKAGE=I2

$K\overline{K}$ MODE

NODE=M065M2
NODE=M065M2

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$1688.7\pm 3.1^{+141.1}_{-\ \ 1.3}$		[1] ALBRECHT	20	RVUE		0.9 $\overline{p}p \to K^+K^-\pi^0$
1541 ±12 ± 33	190k	[2] AAIJ	16N	LHCB		$D^0 \to K^0_S K^\pm\pi^\mp$
1740.8±22.2	27k	[3] ABELE	99D	CBAR	±	0.0 $\overline{p}p \to K^+K^-\pi^0$
1582 ±36	1600	CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$

[1] T-matrix pole, 2 poles, 3 channels, including $\pi\pi$ scattering data from HYAMS 75. NODE=M065M2;LINKAGE=D

[2] Using the GOUNARIS 68 parameterization with a fixed width. Value is average using different $K\pi$ S-wave parametrizations in fit. NODE=M065M2;LINKAGE=A

[3] K-matrix pole. Isospin not determined, could be $\omega(1650)$ or $\phi(1680)$. NODE=M065M2;LINKAGE=AN

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

NODE=M065M4
NODE=M065M4

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1663 \pm 13 \pm 22$		[1] ACHARYA	26	ALCE	5 TeV PbPb $\to$ PbPb4π
1851^{+27}_{-24}		ACHASOV	97	RVUE	$e^+e^- \to 2(\pi^+\pi^-)$
1570 ± 20		[2] CORDIER	82	DM1	$e^+e^- \to 2(\pi^+\pi^-)$
1520 ± 30		[3] ASTON	81E	OMEG	20–70 $\gamma p \to p 4\pi$
1654 ± 25		[4] DIBIANCA	81	DBC	$\pi^+ d \to pp2(\pi^+\pi^-)$
1666 ± 39		[2] BACCI	80	FRAG	$e^+e^- \to 2(\pi^+\pi^-)$
1780	34	KILLIAN	80	SPEC	11 $e^- p \to 2(\pi^+\pi^-)$
1500		[5] ATIYA	79B	SPEC	50 γC $\to$ C$4\pi^\pm$
1570 ± 60	65	[6] ALEXANDER	75	HBC	7.5 $\gamma p \to p 4\pi$
1550 ± 60		[3] CONVERSI	74	OSPK	$e^+e^- \to 2(\pi^+\pi^-)$
1550 ± 50	160	SCHACHT	74	STRC	5.5–9 $\gamma p \to p 4\pi$
1450 ± 100	340	SCHACHT	74	STRC	9–18 $\gamma p \to p 4\pi$
1430 ± 50	400	BINGHAM	72B	HBC	9.3 $\gamma p \to p 4\pi$

OCCUR=2

[1] From a two Breit-Wigner resonance fit to the 4π mass distribution produced in ultraperipheral Pb$-$Pb collisions.
[2] Simple relativistic Breit-Wigner fit with model dependent width.
[3] Simple relativistic Breit-Wigner fit with constant width.
[4] One peak fit result.
[5] Parameters roughly estimated, not from a fit.
[6] Skew mass distribution compensated by Ross-Stodolsky factor.

NODE=M065M4;LINKAGE=A
NODE=M065M;LINKAGE=A
NODE=M065M4;LINKAGE=M
NODE=M065M;LINKAGE=O
NODE=M065M;LINKAGE=C
NODE=M065M;LINKAGE=D

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

NODE=M065M5
NODE=M065M5

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

NODE=M065M7
NODE=M065M7

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1730 ± 34	[1] FRABETTI	04	E687	$\gamma p \to 3\pi^+ 3\pi^- p$
1783 ± 15	CLEGG	90	RVUE	$e^+e^- \to 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$

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

NODE=M065M;LINKAGE=PI

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

NODE=M065DM
NODE=M065DM

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
-48.30 ± 83.81	[1] BARTOS	17A	RVUE	$e^+e^- \to \pi^+\pi^-$, $\tau^- \to \pi^-\pi^0\nu_\tau$

[1] Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUBNICKA 10 to analyze the data of ACHASOV 06, AKHMETSHIN 07, AUBERT 09AS, AMBROSINO 11A, and FUJIKAWA 08.

NODE=M065DM;LINKAGE=A

$\rho(1700)$ WIDTH

NODE=M065210

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

NODE=M065W0
NODE=M065W0

VALUE (MeV)	DOCUMENT ID
250±100 OUR ESTIMATE	

$\to$ UNCHECKED $\leftarrow$

$\eta\rho^0$ MODE

NODE=M065W6
NODE=M065W6

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

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
47 ± 19	13.4k	[1] GRIBANOV	20	CMD3	1.1–2.0 $e^+e^- \to \eta\pi^+\pi^-$
132 ± 40	7.4k	[2] ACHASOV	18	SND	1.22–2.00 $e^+e^- \to \eta\pi^+\pi^-$
150 ± 30		ANTONELLI	88	DM2	$e^+e^- \to \eta\pi^+\pi^-$
282 ± 44		[3] FUKUI	88	SPEC	8.95 $\pi^- p \to \eta\pi^+\pi^- n$

[1] Mass and width of the $\rho(770)$ fixed at 775 and 149 MeV, respectively; solution 2 of model 2, $\eta \to \gamma\gamma$ 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.
[3] Assuming $\rho^+ f_0(1370)$ decay mode interferes with $a_1(1260)^+\pi$ background. From a two Breit-Wigner fit.

NODE=M065W6;LINKAGE=B
NODE=M065W6;LINKAGE=A
NODE=M065W;LINKAGE=B

$\pi\pi$ MODE

NODE=M065W1

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. • • •						
290 ± 40			[1] AAIJ	25AG	LHCB	5 TeV PbPb → PbPb$\pi^+\pi^-$
249.39 ± 52.24		34M	[2] IGNATOV	24	CMD3	$e^+e^- \to \pi^+\pi^-$
143 ± 21			[3] ACHARYA	20F	ALCE	5 TeV PbPb → PbPb$\pi^+\pi^-$
268.98 ± 11.40			[4] BARTOS	17	RVUE	$e^+e^- \to \pi^+\pi^-$
489.58 ± 16.95			[5] BARTOS	17A	RVUE	$e^+e^- \to \pi^+\pi^-$
414.71 ± 119.48			[6] BARTOS	17A	RVUE	$\tau^- \to \pi^-\pi^0\nu_\tau$
109 ± 19		20k	[7] LEES	17C	BABR	$J/\psi \to \pi^+\pi^-\pi^0$
310 ± 30	$^{+25}_{-35}$	63.5k	[8] ABRAMOWICZ	12	ZEUS	$e p \to e\pi^+\pi^- p$
316 ± 26			[9] LEES	12G	BABR	$e^+e^- \to \pi^+\pi^-\gamma$
164 ± 21	$^{+89}_{-26}$	5.4M	[10,11] FUJIKAWA	08	BELL	$\tau^- \to \pi^-\pi^0\nu_\tau$
275 ± 45			[12] ABELE	97	CBAR	$\overline{p}n \to \pi^-\pi^0\pi^0$
310 ± 40			[12] 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			[13] 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			[14] ASTON	80	OMEG	20–70 $\gamma p \to p 2\pi$
283 ± 14			[15] ATIYA	79B	SPEC	50 γC → C2π
175 $^{+98}_{-53}$			BECKER	79	ASPK	17 $\pi^- p$ polarized
232 ± 34			[13] LANG	79	RVUE	
340			[13] MARTIN	78C	RVUE	17 $\pi^- p \to \pi^+\pi^- n$
300 ± 100			[13] FROGGATT	77	RVUE	17 $\pi^- p \to \pi^+\pi^- n$
180 ± 50			[16] HYAMS	73	ASPK	17 $\pi^- p \to \pi^+\pi^- n$

OCCUR=2

[1] Using the parametrisation as in ANDREEV 20 with ρ-ω interference with the additional presence of two Breit-Wigner resonances for excited ρ states. NODE=M065W1;LINKAGE=G

[2] From a fit of the pion form factor using the GOUNARIS 68 parametrization with the complex phase of the $\rho-\omega$ interference leaving ρ(1450), ρ(1700) resonances as free parameters of the fit. The fit uses also data from CMD-2 and DM2 experiments. Systematic errors not estimated. NODE=M065W1;LINKAGE=F

[3] J^{PC} not determined, could be ρ_3(1690). NODE=M065W1;LINKAGE=H

[4] Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUBNICKA 10 to analyze the data of LEES 12G and ABLIKIM 16C. NODE=M065W1;LINKAGE=C

[5] Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUBNICKA 10 to analyze the data of ACHASOV 06, AKHMETSHIN 07, AUBERT 09AS, and AMBROSINO 11A. NODE=M065W1;LINKAGE=D

[6] Applies the Unitary & Analytic Model of the pion electromagnetic form factor of DUBNICKA 10 to analyze the data of FUJIKAWA 08. NODE=M065W1;LINKAGE=E

[7] From a Dalitz plot analysis in an isobar model with ρ(1450) and ρ(1700) masses and widths floating. NODE=M065W1;LINKAGE=A

[8] Using the KUHN 90 parametrization of the pion form factor, neglecting $\rho-\omega$ interference. NODE=M065W1;LINKAGE=AB

[9] Using the GOUNARIS 68 parametrization of the pion form factor leaving the masses and widths of the ρ(1450), ρ(1700), and ρ(2150) resonances as free parameters of the fit. NODE=M065W1;LINKAGE=LE

[10] $|F_\pi(0)|^2$ fixed to 1. NODE=M065W1;LINKAGE=FU

[11] From the GOUNARIS 68 parametrization of the pion form factor. NODE=M065W1;LINKAGE=GO

[12] T-matrix pole. NODE=M065W;LINKAGE=QQ

[13] From phase shift analysis of HYAMS 73 data. NODE=M065W;LINKAGE=P

[14] Simple relativistic Breit-Wigner fit with constant width. NODE=M065W;LINKAGE=M

[15] An additional 40 MeV uncertainty in both the mass and width is present due to the choice of the background shape. NODE=M065W;LINKAGE=R

[16] Included in BECKER 79 analysis. NODE=M065W;LINKAGE=H

$K\overline{K}$ MODE

NODE=M065W2

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
150.9 ± 2.5 $^{+60}_{-10.6}$		[1] ALBRECHT	20	RVUE		0.9 $\overline{p}p \to K^+K^-\pi^0$
187.2 ± 26.7	27k	[2] ABELE	99D	CBAR	±	0.0 $\overline{p}p \to K^+K^-\pi^0$
265 ± 120	1600	CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$

[1] T-matrix pole, 2 poles, 3 channels, including $\pi\pi$ scattering data from HYAMS 75. NODE=M065W2;LINKAGE=A

[2] K-matrix pole. Isospin not determined, could be ω(1650) or ϕ(1680). NODE=M065W2;LINKAGE=AN

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

NODE=M065W4
NODE=M065W4

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$357 \pm 31 \pm 49$		[1] ACHARYA	26	ALCE	5 TeV PbPb $\rightarrow$ PbPb4π
510 ± 40		[2] CORDIER	82	DM1	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
400 ± 50		[3] ASTON	81E	OMEG	20–70 $\gamma p \rightarrow p4\pi$
400 ± 146		[4] DIBIANCA	81	DBC	$\pi^+ d \rightarrow pp2(\pi^+\pi^-)$
700 ± 160		[2] BACCI	80	FRAG	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
100	34	KILLIAN	80	SPEC	11 $e^- p \rightarrow 2(\pi^+\pi^-)$
600		[5] ATIYA	79B	SPEC	50 γC $\rightarrow$ C$4\pi^\pm$
340 ± 160	65	[6] ALEXANDER	75	HBC	7.5 $\gamma p \rightarrow p4\pi$
360 ± 100		[3] CONVERSI	74	OSPK	$e^+e^- \rightarrow 2(\pi^+\pi^-)$
400 ± 120	160	[7] SCHACHT	74	STRC	5.5–9 $\gamma p \rightarrow p4\pi$
850 ± 200	340	[7] SCHACHT	74	STRC	9–18 $\gamma p \rightarrow p4\pi$
650 ± 100	400	BINGHAM	72B	HBC	9.3 $\gamma p \rightarrow p4\pi$

OCCUR=2

[1] From a two Breit-Wigner resonance fit to the 4π mass distribution produced in ultraperipheral Pb−Pb collisions. NODE=M065W4;LINKAGE=A

[2] Simple relativistic Breit-Wigner fit with model-dependent width. NODE=M065W;LINKAGE=A

[3] Simple relativistic Breit-Wigner fit with constant width. NODE=M065W4;LINKAGE=M

[4] One peak fit result. NODE=M065W;LINKAGE=O

[5] Parameters roughly estimated, not from a fit. NODE=M065W;LINKAGE=C

[6] Skew mass distribution compensated by Ross-Stodolsky factor. NODE=M065W;LINKAGE=D

[7] Width errors enlarged by us to $4\Gamma/\sqrt{N}$; see the note with the $K^*(892)$ mass. NODE=M065W;LINKAGE=E

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

NODE=M065W5
NODE=M065W5

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

NODE=M065W9
NODE=M065W9

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
371 ± 3	[1] ACHASOV	23A	SND	$e^+e^- \rightarrow \omega\pi^0$
350 to 580	[2] ACHASOV	00I	SND	$e^+e^- \rightarrow \pi^0\pi^0\gamma$
490 to 1040	[3] ACHASOV	00I	SND	$e^+e^- \rightarrow \pi^0\pi^0\gamma$

OCCUR=2

[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 1.5 GeV. NODE=M065W9;LINKAGE=A

[2] 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. NODE=M065W;LINKAGE=I1

[3] 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 $\tau^- \rightarrow \omega\pi^-\nu_\tau$. NODE=M065W;LINKAGE=I2

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

NODE=M065W7
NODE=M065W7

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
315 ± 100	[1] FRABETTI	04	E687	$\gamma p \rightarrow 3\pi^+ 3\pi^- p$
285 ± 20	CLEGG	90	RVUE	$e^+e^- \rightarrow 3(\pi^+\pi^-)2(\pi^+\pi^-\pi^0)$

[1] From a fit with two resonances with the JACOB 72 continuum. NODE=M065W;LINKAGE=PI

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

NODE=M065DW

NODE=M065DW

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data 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 Unitary & Analytic Model of the pion electromagnetic form factor of DUBNICKA 10 to analyze the data of ACHASOV 06, AKHMETSHIN 07, AUBERT 09AS, AMBROSINO 11A, and FUJIKAWA 08. NODE=M065DW;LINKAGE=A

$\rho(1700)$ DECAY MODES

NODE=M065215;NODE=M065

	Mode	Fraction (Γ_i/Γ)	
Γ_1	4π		DESIG=20
Γ_2	$2(\pi^+\pi^-)$	seen	DESIG=2;OUR EST;→ UNCHECKED ←
Γ_3	$\rho\pi\pi$	seen	DESIG=12;OUR EST;→ UNCHECKED ←
Γ_4	$\rho^0\pi^+\pi^-$	seen	DESIG=1;OUR EST;→ UNCHECKED ←
Γ_5	$\rho^0\pi^0\pi^0$		DESIG=7
Γ_6	$\rho^\pm\pi^\mp\pi^0$	seen	DESIG=9;OUR EST;→ UNCHECKED ←
Γ_7	$a_1(1260)\pi$	seen	DESIG=15;OUR EST;→ UNCHECKED ←
Γ_8	$h_1(1170)\pi$	seen	DESIG=16;OUR EST;→ UNCHECKED ←
Γ_9	$\pi(1300)\pi$	seen	DESIG=17;OUR EST;→ UNCHECKED ←
Γ_{10}	$\rho\rho$	seen	DESIG=18;OUR EST;→ UNCHECKED ←
Γ_{11}	$\pi^+\pi^-$	seen	DESIG=4;OUR EST;→ UNCHECKED ←
Γ_{12}	$\pi\pi$	seen	DESIG=13;OUR EST;→ UNCHECKED ←
Γ_{13}	$K\overline{K}^*(892)+$ c.c.	seen	DESIG=10;OUR EST;→ UNCHECKED ←
Γ_{14}	$\eta\rho$	seen	DESIG=11;OUR EST;→ UNCHECKED ←
Γ_{15}	$a_2(1320)\pi$	not seen	DESIG=14;OUR EST;→ UNCHECKED ←
Γ_{16}	$K\overline{K}$	seen	DESIG=5;OUR EST;→ UNCHECKED ←
Γ_{17}	e^+e^-	seen	DESIG=8;OUR EST;→ UNCHECKED ←
Γ_{18}	$\pi^0\omega$	seen	DESIG=6;OUR EST;→ UNCHECKED ←
Γ_{19}	$\pi^0\gamma$	not seen	DESIG=194
Γ_{20}	$f_0(1500)\gamma$	not seen	DESIG=195

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

NODE=M065225

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.

NODE=M065225

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

NODE=M065G2
NODE=M065G2

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	$e^+e^- \to 2(\pi^+\pi^-)$

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

NODE=M065G4
NODE=M065G4

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.13	[1] DIEKMAN	88	RVUE	$e^+e^- \to \pi^+\pi^-$
$0.029^{+0.016}_{-0.012}$	KURDADZE	83	OLYA	0.64–1.4 $e^+e^- \to \pi^+\pi^-$

[1] Using total width = 220 MeV.

NODE=M065G4;LINKAGE=B

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

NODE=M065G10
NODE=M065G10

VALUE (keV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.305±0.071	[1] BIZOT	80	DM1	e^+e^-

[1] Model dependent.

NODE=M065G;LINKAGE=M

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

NODE=M065G11
NODE=M065G11

VALUE (eV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.35± 0.53±0.08	13.4k	[1] GRIBANOV	20	CMD3	1.1–2.0 $e^+e^- \to \eta\pi^+\pi^-$
84 ±26 ±4		[2] LEES	18	BABR	$e^+e^- \to \eta\pi^+\pi^-$
7 ± 3		ANTONELLI	88	DM2	$e^+e^- \to \eta\pi^+\pi^-$

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

NODE=M065G11;LINKAGE=B

[2] Includes non-resonant contribution. The selected fit model includes three ρ excited states. Model uncertainty is 80%.

NODE=M065G11;LINKAGE=A

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

NODE=M065G5

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.035 ± 0.029	[1] BIZOT	80	DM1	e^+e^-

[1] Model dependent.

NODE=M065G5;LINKAGE=M

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

NODE=M065G12

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.510 ± 0.090	[1] BIZOT	80	DM1	e^+e^-

[1] Model dependent.

NODE=M065G12;LINKAGE=M

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

NODE=M065240

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

NODE=M065R01

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.09 ± 0.05	10.2k	[1] ACHASOV	16D	SND	1.05–2.00 $e^+e^- \rightarrow \pi^0\pi^0\gamma$
1.7 ± 0.4	7815	[2] ACHASOV	13	SND	1.05–2.00 $e^+e^- \rightarrow \pi^0\pi^0\gamma$

OCCUR=4

[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.

NODE=M065R01;LINKAGE=B

[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.

NODE=M065R01;LINKAGE=AC

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

NODE=M065R00

VALUE (units 10^{-8})	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$8.3^{+3.8}_{-3.1}$	7.4k	[1] ACHASOV	18	SND	1.22–2.00 $e^+e^- \rightarrow \eta\pi^+\pi^-$

[1] 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.

NODE=M065R00;LINKAGE=A

$\rho(1700)$ BRANCHING RATIOS

NODE=M065230

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

NODE=M065R19

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.28 ± 0.06	[1] ABELE	01B	CBAR	0.0 $\overline{p}n \rightarrow 5\pi$

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

NODE=M065R;LINKAGE=BL

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

NODE=M065R1

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 ± 0.1	500	SCHACHT	74	STRC	5.5–18 $\gamma p \rightarrow p4\pi$
0.80		[1] BINGHAM	72B	HBC	9.3 $\gamma p \rightarrow p4\pi$

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

NODE=M065R1;LINKAGE=S

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

NODE=M065R6

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 $\gamma p \rightarrow p4\pi$

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

NODE=M065R15

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.16 ± 0.05	[1] ABELE	01B	CBAR	0.0 $\overline{p}n \rightarrow 5\pi$

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

NODE=M065R15;LINKAGE=BL

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

NODE=M065R16
NODE=M065R16

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.17 ± 0.06	[1] ABELE	01B	CBAR	0.0 $\overline{p}n \to 5\pi$

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

NODE=M065R16;LINKAGE=BL

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

NODE=M065R17
NODE=M065R17

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.30 ± 0.10	[1] ABELE	01B	CBAR	0.0 $\overline{p}n \to 5\pi$

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

NODE=M065R17;LINKAGE=BL

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

NODE=M065R18
NODE=M065R18

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.09 ± 0.03	[1] ABELE	01B	CBAR	0.0 $\overline{p}n \to 5\pi$

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

NODE=M065R18;LINKAGE=BL

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

NODE=M065R5
NODE=M065R5

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.108\pm0.017^{+0.162}_{-0.004}$	[1] ALBRECHT	20	RVUE	0.9 $\overline{p}p \to K^+K^-\pi^0$
$0.287^{+0.043}_{-0.042}$	BECKER	79	ASPK	17 π^-p polarized
0.15 to 0.30	[2] MARTIN	78C	RVUE	17 $\pi^-p \to \pi^+\pi^-n$
<0.20	[3] COSTA...	77B	RVUE	$e^+e^- \to 2\pi, 4\pi$
0.30 ± 0.05	[2] FROGGATT	77	RVUE	17 $\pi^-p \to \pi^+\pi^-n$
<0.15	[4] EISENBERG	73	HBC	5 $\pi^+p \to \Delta^{++}2\pi$
0.25 ± 0.05	[5] HYAMS	73	ASPK	17 $\pi^-p \to \pi^+\pi^-n$

[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.

NODE=M065R5;LINKAGE=A

[2] From phase shift analysis of HYAMS 73 data.

NODE=M065R5;LINKAGE=P

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

NODE=M065R5;LINKAGE=C

[4] Estimated using one-pion-exchange model.

NODE=M065R5;LINKAGE=E

[5] Included in BECKER 79 analysis.

NODE=M065R5;LINKAGE=H

$\Gamma(K\overline{K})/\Gamma_{total}$ Γ_{16}/Γ

NODE=M065R03
NODE=M065R03

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.007\pm0.006^{+0.041}_{-0.002}$	[1] ALBRECHT	20	RVUE	0.9 $\overline{p}p \to K^+K^-\pi^0$

[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.

NODE=M065R03;LINKAGE=A

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

NODE=M065R3
NODE=M065R3

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 $\gamma p \to p2\pi$
<0.14	[1] DAVIER	73	STRC	6–18 $\gamma p \to p4\pi$
<0.2	[2] BINGHAM	72B	HBC	9.3 $\gamma p \to p2\pi$

[1] Upper limit is estimate.

NODE=M065R3;LINKAGE=E

[2] 2σ upper limit.

NODE=M065R3;LINKAGE=S

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

NODE=M065R20
NODE=M065R20

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.16 ± 0.04	[1,2] ABELE	01B	CBAR	0.0 $\overline{p}n \to 5\pi$

[1] Using ABELE 97.

NODE=M065R;LINKAGE=LK

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

NODE=M065R20;LINKAGE=BL

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

NODE=M065R21
NODE=M065R21

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

NODE=M065R9
NODE=M065R9

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.15 ± 0.03	[1] DELCOURT	81B	DM1	$e^+e^- \to \overline{K}K\pi$

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

NODE=M065R9;LINKAGE=D

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

NODE=M065R12
NODE=M065R12

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

NODE=M065R8
NODE=M065R8

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

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

NODE=M065R7
NODE=M065R7

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2.6 ± 0.4	[1] BALLAM	74	HBC	9.3 γp

[1] Upper limit. Background not subtracted.

NODE=M065R7;LINKAGE=U

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

NODE=M065R14
NODE=M065R14

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

NODE=M065R4
NODE=M065R4

VALUE	CL%	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.015 ± 0.010		[1] DELCOURT	81B	DM1		$e^+e^- \to \overline{K}K$
<0.04	95	BINGHAM	72B	HBC	0	9.3 γp

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

NODE=M065R4;LINKAGE=D

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

NODE=M065R10
NODE=M065R10

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

NODE=M065R13
NODE=M065R13

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	$e^+e^- \to \omega\pi^0$

$\Gamma(\pi^0\gamma)/\Gamma_{total}$ Γ_{19}/Γ

NODE=M065R02
NODE=M065R02

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[1] ACHASOV	10D	SND	1.075–2.0 $e^+e^- \to \pi^0\gamma$

[1] From a fit of a VMD model with two effective resonances with masses 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.

NODE=M065R02;LINKAGE=A

$\Gamma(f_0(1500)\gamma)/\Gamma_{total}$ Γ_{20}/Γ

NODE=M065R04
NODE=M065R04

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	[1] ACHASOV	22	SND	1.17–2.00 $e^+e^- \to \eta\eta\gamma$

[1] The 90% CL upper limit on the Born cross sections $\sigma(e^+e^- \to \phi(1680) \to f'_2(1525)\gamma \to \eta\eta\gamma)$ and $\sigma(e^+e^- \to \rho(1700) \to f_0(1500)\gamma \to \eta\eta\gamma)$ is 10.6 pb.

NODE=M065R04;LINKAGE=A

$\rho(1700)$ REFERENCES

NODE=M065

ACHARYA	26	PL B872 140006	S. Acharya *et al.*	(ALICE Collab.)	REFID=63754
AAIJ	25AG	JHEP 2511 103	R. Aaij *et al.*	(LHCb Collab.)	REFID=63627
IGNATOV	24	PR D109 112002	F.V. Ignatov *et al.*	(CMD-3 Collab.)	REFID=62672
ACHASOV	23A	PR D108 092012	M.N. Achasov *et al.*	(SND Collab.)	REFID=62428
ACHASOV	22	EPJ C82 168	M.N. Achasov *et al.*	(SND Collab.)	REFID=61655
ABLIKIM	21A	PL B813 136059	M. Ablikim *et al.*	(BESIII Collab.)	REFID=61028
ACHARYA	20F	JHEP 2006 035	S. Acharya *et al.*	(ALICE Collab.)	REFID=63784
ALBRECHT	20	EPJ C80 453	M. Albrecht *et al.*	(Crystal Barrel Collab.)	REFID=60439
ANDREEV	20	EPJ C80 1189	V. Andreev *et al.*	(H1 Collab.)	REFID=60773
GRIBANOV	20	JHEP 2001 112	S.S. Gribanov *et al.*	(CMD-3 Collab.)	REFID=60620
ACHASOV	18	PR D97 012008	M.N. Achasov *et al.*	(SND Collab.)	REFID=58785
LEES	18	PR D97 052007	J.P. Lees *et al.*	(BABAR Collab.)	REFID=58900
BARTOS	17	PR D96 113004	E. Bartos *et al.*		REFID=58325
BARTOS	17A	IJMP A32 1750154	E. Bartos *et al.*		REFID=58367
LEES	17C	PR D95 072007	J.P. Lees *et al.*	(BABAR Collab.)	REFID=57981
LEES	17H	PR D96 092009	J.P. Lees *et al.*	(BABAR Collab.)	REFID=58311
AAIJ	16N	PR D93 052018	R. Aaij *et al.*	(LHCb Collab.)	REFID=57273
ABLIKIM	16C	PL B753 629	M. Ablikim *et al.*	(BESIII Collab.)	REFID=57138
ACHASOV	16D	PR D94 112001	M.N. Achasov *et al.*	(SND Collab.)	REFID=57618
AULCHENKO	15	PR D91 052013	V.M. Aulchenko *et al.*	(SND Collab.)	REFID=56793
MATVIENKO	15	PR D92 012013	D. Matvienko *et al.*	(BELLE Collab.)	REFID=56601
ACHASOV	13	PR D88 054013	M.N. Achasov *et al.*	(SND Collab.)	REFID=55584
ABRAMOWICZ	12	EPJ C72 1869	H. Abramowicz *et al.*	(ZEUS Collab.)	REFID=54274
ACHASOV	12	JETPL 94 734	M.N. Achasov *et al.*		REFID=54275
		Translated from ZETFP 94 796.			
LEES	12G	PR D86 032013	J.P. Lees *et al.*	(BABAR Collab.)	REFID=54299
AMBROSINO	11A	PL B700 102	F. Ambrosino *et al.*	(KLOE Collab.)	REFID=16683
GARCIA-MAR...	11A	PR D83 074004	R. Garcia-Martin *et al.*	(MADR, CRAC)	REFID=54121
ACHASOV	10D	PR D98 112001	M.N. Achasov *et al.*	(SND Collab.)	REFID=59494
DUBNICKA	10	APS 60 1	S. Dubnicka, A.Z. Dubnickova		REFID=58797
AUBERT	09AS	PRL 103 231801	B. Aubert *et al.*	(BABAR Collab.)	REFID=53136
FUJIKAWA	08	PR D78 072006	M. Fujikawa *et al.*	(BELLE Collab.)	REFID=52536
AKHMETSHIN	07	PL B648 28	R.R. Akhmetshin *et al.*	(Novosibirsk CMD-2 Collab.)	REFID=51615
ACHASOV	06	JETP 103 380	M.N. Achasov *et al.*	(Novosibirsk SND Collab.)	REFID=51113
		Translated from ZETF 130 437.			
COAN	04	PRL 92 232001	T.E. Coan *et al.*	(CLEO Collab.)	REFID=49945
FRABETTI	04	PL B578 290	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=49614
AKHMETSHIN	03B	PL B562 173	R.R. Akhmetshin *et al.*	(Novosibirsk CMD-2 Collab.)	REFID=49406
ABELE	01B	EPJ C21 261	A. Abele *et al.*	(Crystal Barrel Collab.)	REFID=48356
ACHASOV	00I	PL B486 29	M.N. Achasov *et al.*	(Novosibirsk SND Collab.)	REFID=47931
AKHMETSHIN	00D	PL B489 125	R.R. Akhmetshin *et al.*	(Novosibirsk CMD-2 Collab.)	REFID=47935
AMELIN	00	NP A668 83	D. Amelin *et al.*	(VES Collab.)	REFID=47432
EDWARDS	00A	PR D61 072003	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=47465
ABELE	99D	PL B468 178	A. Abele *et al.*	(Crystal Barrel Collab.)	REFID=47401
ABELE	97	PL B391 191	A. Abele *et al.*	(Crystal Barrel Collab.)	REFID=45415
ACHASOV	97	PR D55 2663	N.N. Achasov *et al.*	(NOVM)	REFID=45382
BERTIN	97C	PL B408 476	A. Bertin *et al.*	(OBELIX Collab.)	REFID=45701
CLEGG	94	ZPHY C62 455	A.B. Clegg, A. Donnachie	(LANC, MCHS)	REFID=44081
CLEGG	90	ZPHY C45 677	A.B. Clegg, A. Donnachie	(LANC, MCHS)	REFID=41355
KUHN	90	ZPHY C48 445	J.H. Kuhn *et al.*	(MPIM)	REFID=45862
BISELLO	89	PL B220 321	D. Bisello *et al.*	(DM2 Collab.)	REFID=40740
DUBNICKA	89	JP G15 1349	S. Dubnicka *et al.*	(JINR, SLOV)	REFID=44082
GESHKEN...	89	ZPHY C45 351	B.V. Geshkenbein	(ITEP)	REFID=41017
ANTONELLI	88	PL B212 133	A. Antonelli *et al.*	(DM2 Collab.)	REFID=40583
DIEKMAN	88	PRPL 159 99	B. Diekmann	(BONN)	REFID=40272
FUKUI	88	PL B202 441	S. Fukui *et al.*	(SUGI, NAGO, KEK, KYOT+)	REFID=40273
DONNACHIE	87B	ZPHY C34 257	A. Donnachie, A.B. Clegg	(MCHS, LANC)	REFID=40920
ATKINSON	86B	ZPHY C30 531	M. Atkinson *et al.*	(BONN, CERN, GLAS+)	REFID=21508
ATKINSON	85B	ZPHY C26 499	M. Atkinson *et al.*	(BONN, CERN, GLAS+)	REFID=21506
ERKAL	85	ZPHY C29 485	C. Erkal, M.G. Olsson	(WISC)	REFID=20136
ABE	84B	PRL 53 751	K. Abe *et al.*	(SLAC HFP Collab.)	REFID=21503
KURDADZE	83	JETPL 37 733	L.M. Kurdadze *et al.*	(NOVO)	REFID=20133
		Translated from ZETFP 37 613.			
ATKINSON	82	PL 108B 55	M. Atkinson *et al.*	(BONN, CERN, GLAS+)	REFID=21493
BUON	82	PL 118B 221	J. Buon *et al.*	(LALO, MONP)	REFID=21494
CLELAND	82B	NP B208 228	W.E. Cleland *et al.*	(DURH, GEVA, LAUS+)	REFID=21281
CORDIER	82	PL 109B 129	A. Cordier *et al.*	(LALO)	REFID=21495
DELCOURT	82	PL 113B 93	B. Delcourt *et al.*	(LALO)	REFID=21496
ASTON	81E	NP B189 15	D. Aston	(BONN, CERN, EPOL, GLAS, LANC+)	REFID=21487
DELCOURT	81B	Bonn Conf. 205	B. Delcourt	(ORSAY)	REFID=21490
Also		PL 109B 129	A. Cordier *et al.*	(LALO)	REFID=21495
DIBIANCA	81	PR D23 595	F.A. di Bianca *et al.*	(CASE, CMU)	REFID=21492
ASTON	80	PL 92B 215	D. Aston	(BONN, CERN, EPOL, GLAS, LANC+)	REFID=21478
BACCI	80	PL 95B 139	C. Bacci *et al.*	(ROMA, FRAS)	REFID=21481
BIZOT	80	Madison Conf. 546	J.C. Bizot *et al.*	(LALO, MONP)	REFID=21482
KILLIAN	80	PR D21 3005	T.J. Killian *et al.*	(CORN)	REFID=21484
ATIYA	79B	PRL 43 1691	M.S. Atiya *et al.*	(COLU, ILL, FNAL)	REFID=21470
BECKER	79	NP B151 46	H. Becker *et al.*	(MPIM, CERN, ZEEM, CRAC)	REFID=21084
LANG	79	PR D19 956	C.B. Lang, A. Mas-Parareda	(GRAZ)	REFID=20126
MARTIN	78C	ANP 114 1	A.D. Martin, M.R. Pennington	(CERN)	REFID=21661
COSTA...	77B	PL 71B 345	B. Costa de Beauregard, B. Pire, T.N. Truong	(EPOL)	REFID=21465
FROGGATT	77	NP B129 89	C.D. Froggatt, J.L. Petersen	(GLAS, NORD)	REFID=21072
ALEXANDER	75	PL 57B 487	G. Alexander *et al.*	(TELA)	REFID=21450
HYAMS	75	NP B100 205	B.D. Hyams *et al.*	(CERN, MPIM)	REFID=20355
BALLAM	74	NP B76 375	J. Ballam *et al.*	(SLAC, LBL, MPIM)	REFID=20610
CONVERSI	74	PL 52B 493	M. Conversi *et al.*	(ROMA, FRAS)	REFID=20637
SCHACHT	74	NP B81 205	P. Schacht *et al.*	(MPIM)	REFID=21449
DAVIER	73	NP B58 31	M. Davier *et al.*	(SLAC)	REFID=21434
EISENBERG	73	PL 43B 149	Y. Eisenberg *et al.*	(REHO)	REFID=21435
HYAMS	73	NP B64 134	B.D. Hyams *et al.*	(CERN, MPIM)	REFID=20107
BINGHAM	72B	PL 41B 635	H.H. Bingham *et al.*	(LBL, UCB, SLAC) IGJP	REFID=21426
JACOB	72	PR D5 1847	M. Jacob, R. Slansky		REFID=49668
GOUNARIS	68	PRL 21 244	G.J. Gounaris, J.J. Sakurai		REFID=48054