Meson Full Listings

$J/\psi(1S) = J/\psi(3097)$

$\Gamma(\mu^+\mu^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_4\Gamma_3/\Gamma$

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.31 ± 0.09	BEMPORAD	75	FRAB	e^+e^-
0.51 ± 0.09	DASP	75	DASP	e^+e^-
0.38 ± 0.05	[7] ESPOSITO	75B	FRAM	e^+e^-
0.46 ± 0.10	[7] LIBERMAN	75	SPEC	e^+e^-

$\Gamma(p\bar{p}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{75}\Gamma_3/\Gamma$

VALUE (keV)	DOCUMENT ID		TECN	COMMENT
9.7 ± 1.7	[6] ARMSTRONG	93B	SPEC	$\bar{p}p \to e^+e^-$

[6] Using $\Gamma_{\text{total}} = 85.5^{+6.1}_{-5.8}$ MeV.

[7] Data redundant with branching ratios or partial widths above.

$J/\psi(1S)$ BRANCHING RATIOS

For the first four branching ratios, see also the partial widths, and (partial widths) × $\Gamma(e^+e^-)/\Gamma_{\text{total}}$ above.

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

VALUE	DOCUMENT ID		TECN	COMMENT
0.86 ± 0.02	BOYARSKI	75	MRK1	e^+e^-

$\Gamma(\text{virtual}\gamma \to \text{hadrons})/\Gamma_{\text{total}}$ Γ_2/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.17 ± 0.02	[8] BOYARSKI	75	MRK1	e^+e^-

[8] Included in $\Gamma(\text{hadrons})/\Gamma_{\text{total}}$.

$\Gamma(e^+e^-)/\Gamma_{\text{total}}$ Γ_3/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.0599 ± 0.0025 OUR AVERAGE				
0.0592 ± 0.0015 ± 0.0020	COFFMAN	92	MRK3	$\psi(2S) \to J/\psi\pi^+\pi^-$
0.069 ± 0.009	BOYARSKI	75	MRK1	e^+e^-

$\Gamma(\mu^+\mu^-)/\Gamma_{\text{total}}$ Γ_4/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.0597 ± 0.0025 OUR AVERAGE	Error includes scale factor of 1.1.			
0.0590 ± 0.0015 ± 0.0019	COFFMAN	92	MRK3	$\psi(2S) \to J/\psi\pi^+\pi^-$
0.069 ± 0.009	BOYARSKI	75	MRK1	e^+e^-

$\Gamma(e^+e^-)/\Gamma(\mu^+\mu^-)$ Γ_3/Γ_4

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.00 ± 0.05	BOYARSKI	75	MRK1	e^+e^-
0.91 ± 0.15	ESPOSITO	75B	FRAM	e^+e^-
0.93 ± 0.10	FORD	75	SPEC	e^+e^-

HADRONIC DECAYS

$\Gamma(\rho\pi)/\Gamma_{\text{total}}$ Γ_5/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0128 ± 0.0010 OUR AVERAGE					
0.0142 ± 0.0001 ± 0.0019		COFFMAN	88	MRK3	e^+e^-
0.013 ± 0.003	150	FRANKLIN	83	MRK2	e^+e^-
0.016 ± 0.004	183	ALEXANDER	78	PLUT	e^+e^-
0.0133 ± 0.0021		BRANDELIK	78B	DASP	e^+e^-
0.010 ± 0.002	543	BARTEL	76	CNTR	e^+e^-
0.013 ± 0.003	153	JEAN-MARIE	76	MRK1	e^+e^-

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

VALUE	DOCUMENT ID		TECN	COMMENT
0.328 ± 0.005 ± 0.027	COFFMAN	88	MRK3	e^+e^-
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.36 ± 0.03	SCHARRE	79B	MRK1	e^+e^-
0.35 ± 0.08	ALEXANDER	78	PLUT	e^+e^-
0.32 ± 0.08	BRANDELIK	78B	DASP	e^+e^-
0.39 ± 0.11	BARTEL	76	CNTR	e^+e^-
0.37 ± 0.09	JEAN-MARIE	76	MRK1	e^+e^-

$\Gamma(a_2(1320)\rho)/\Gamma_{\text{total}}$ Γ_7/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
10.9 ± 2.2 OUR AVERAGE					
11.7 ± 0.7 ± 2.5	7584	AUGUSTIN	89	DM2	$J/\psi \to \rho^0\rho^\pm\pi^\mp$
8.4 ± 4.5	36	VANNUCCI	77	MRK1	$e^+e^- \to 2(\pi^+\pi^-)\pi^0$

$\Gamma(\omega\pi^+\pi^+\pi^-\pi^-)/\Gamma_{\text{total}}$ Γ_8/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
85 ± 34	140	VANNUCCI	77	MRK1	$e^+e^- \to 3(\pi^+\pi^-)\pi^0$

$\Gamma(\omega\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_9/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
7.2 ± 1.0 OUR AVERAGE					
7.0 ± 1.6	18058	AUGUSTIN	89	DM2	$J/\psi \to 2(\pi^+\pi^-)\pi^0$
7.8 ± 1.6	215	BURMESTER	77D	PLUT	e^+e^-
6.8 ± 1.9	348	VANNUCCI	77	MRK1	$e^+e^- \to 2(\pi^+\pi^-)\pi^0$

$\Gamma(\omega\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-)\pi^0)$ Γ_9/Γ_{61}

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.3	[9] JEAN-MARIE	76	MRK1	e^+e^-

[9] Final state $(\pi^+\pi^-)\pi^0$ under the assumption that $\pi\pi$ is isospin 0.

$\Gamma(K^*(892)^0\overline{K}_2^*(1430)^0 + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{10}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
67 ± 26	40	VANNUCCI	77	MRK1	$e^+e^- \to \pi^+\pi^- K^+K^-$

$\Gamma(\omega K^*(892)\overline{K} + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{11}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
53 ± 14 ± 14	530 ± 140	BECKER	87	MRK3	$e^+e^- \to$ hadrons

$\Gamma(\omega f_2(1270))/\Gamma_{\text{total}}$ Γ_{12}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
4.3 ± 0.6 OUR AVERAGE					
4.3 ± 0.2 ± 0.6	5860	AUGUSTIN	89	DM2	e^+e^-
4.0 ± 1.6	70	BURMESTER	77D	PLUT	e^+e^-
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.9 ± 0.8	81	VANNUCCI	77	MRK1	$e^+e^- \to 2(\pi^+\pi^-)\pi^0$

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

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
5.0 ± 0.4 OUR AVERAGE					
4.57 ± 0.17 ± 0.70	2285	JOUSSET	90	DM2	$J/\psi \to$ hadrons
5.26 ± 0.13 ± 0.53		COFFMAN	88	MRK3	$J/\psi \to K^\pm K^0_S\pi^\mp$, $K^+K^-\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.6 ± 0.6	24	FRANKLIN	83	MRK2	$J/\psi \to K^+K^-\pi^0$
3.2 ± 0.6	48	VANNUCCI	77	MRK1	$J/\psi \to K^\pm K^0_S\pi^\mp$
4.1 ± 1.2	39	BRAUNSCH...	76	DASP	$J/\psi \to K^\pm X$

$\Gamma(K^0\overline{K}^*(892)^0 + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{14}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
4.2 ± 0.4 OUR AVERAGE					
3.96 ± 0.15 ± 0.60	1192	JOUSSET	90	DM2	$J/\psi \to$ hadrons
4.33 ± 0.12 ± 0.45		COFFMAN	88	MRK3	$J/\psi \to K^\pm K^0_S\pi^\mp$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.7 ± 0.6	45	VANNUCCI	77	MRK1	$J/\psi \to K^\pm K^0_S\pi^\mp$

$\Gamma(K^0\overline{K}^*(892)^0 + \text{c.c.})/\Gamma(K^+\overline{K}^*(892)^- + \text{c.c.})$ Γ_{14}/Γ_{13}

VALUE	DOCUMENT ID		TECN	COMMENT
0.82 ± 0.05 ± 0.09	COFFMAN	88	MRK3	$J/\psi \to K\overline{K}^*(892) + \text{c.c.}$

$\Gamma(\omega\pi^0\pi^0)/\Gamma_{\text{total}}$ Γ_{15}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
3.4 ± 0.3 ± 0.7	509	AUGUSTIN	89	DM2	$J/\psi \to \pi^+\pi^- 3\pi^0$

$\Gamma(b_1(1235)^\pm\pi^\mp)/\Gamma_{\text{total}}$ Γ_{16}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
30 ± 5 OUR AVERAGE					
31 ± 6	4600	AUGUSTIN	89	DM2	$J/\psi \to 2(\pi^+\pi^-)\pi^0$
29 ± 7	87	BURMESTER	77D	PLUT	e^+e^-

$\Gamma(\omega K^\pm K^0_S\pi^\mp)/\Gamma_{\text{total}}$ Γ_{17}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
29.5 ± 1.4 ± 7.0	879 ± 41	BECKER	87	MRK3	$e^+e^- \to$ hadrons

$\Gamma(b_1(1235)^0\pi^0)/\Gamma_{\text{total}}$ Γ_{18}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
23 ± 3 ± 5	229	AUGUSTIN	89	DM2	e^+e^-

$\Gamma(\phi K^*(892)\overline{K} + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{19}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
20.4 ± 2.8 OUR AVERAGE					
20.7 ± 2.4 ± 3.0		FALVARD	88	DM2	$J/\psi \to$ hadrons
20 ± 3 ± 3	155 ± 20	BECKER	87	MRK3	$e^+e^- \to$ hadrons