Meson Full Listings

$a_2(1320)$

$a_2(1320)$ BRANCHING RATIOS

$\Gamma(K\overline{K})/\Gamma(\rho\pi)$ — Γ_4/Γ_1

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.070±0.012 OUR FIT						
0.078±0.017		CHABAUD	78	RVUE		
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.056±0.014	50	[17] CHALOUPKA	73	HBC	–	3.9 π^- p
0.097±0.018	113	[17] ALSTON-...	71	HBC	+	7.0 π^+ p
0.06 ±0.03		[17] ABRAMOVI...	70B	HBC	–	3.93 π^- p
0.054±0.022		[17] CHUNG	68	HBC	–	3.2 π^- p

[17] Included in CHABAUD 78 review.

$\Gamma(\eta\pi)/[\Gamma(\rho\pi)+\Gamma(\eta\pi)+\Gamma(K\overline{K})]$ — $\Gamma_2/(\Gamma_1+\Gamma_2+\Gamma_4)$

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.162±0.012 OUR FIT						
0.140±0.028 OUR AVERAGE						
0.13 ±0.04		ESPIGAT	72	HBC	±	0.0 $\overline{p}p$
0.15 ±0.04	34	BARNHAM	71	HBC	+	3.7 π^+ p

$\Gamma(\eta\pi)/\Gamma(\rho\pi)$ — Γ_2/Γ_1

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.207±0.018 OUR FIT						
0.213±0.020 OUR AVERAGE						
0.18 ±0.05		FORINO	76	HBC		11 π^- p
0.22 ±0.05	52	ANTIPOV	73	CNTR	–	40 π^- p
0.211±0.044	149	CHALOUPKA	73	HBC	–	3.9 π^- p
0.246±0.042	167	ALSTON-...	71	HBC	+	7.0 π^+ p
0.25 ±0.09	15	BOECKMANN	70	HBC	+	5.0 π^+ p
0.23 ±0.08	22	ASCOLI	68	HBC	–	5 π^- p
0.12 ±0.08		CHUNG	68	HBC	–	3.2 π^- p
0.22 ±0.09		CONTE	67	HBC	–	11.0 π^- p

$\Gamma(\eta'(958)\pi)/\Gamma_{\text{total}}$ — Γ_5/Γ

VALUE	CL%	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.006	95	ALDE	92B	GAM2		38,100 π^- p → $\eta'\pi^0 n$
<0.02	97	BARNHAM	71	HBC	+	3.7 π^+ p
0.004±0.004		BOESEBECK	68	HBC	+	8 π^+ p

$\Gamma(\eta'(958)\pi)/\Gamma(\rho\pi)$ — Γ_5/Γ_1

VALUE	CL%	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.011	90	EISENSTEIN	73	HBC	–	5 π^- p
<0.04		ALSTON-...	71	HBC	+	7.0 π^+ p
$0.04\ ^{+0.03}_{-0.04}$		BOECKMANN	70	HBC	0	5.0 π^+ p

$\Gamma(K\overline{K})/[\Gamma(\rho\pi)+\Gamma(\eta\pi)+\Gamma(K\overline{K})]$ — $\Gamma_4/(\Gamma_1+\Gamma_2+\Gamma_4)$

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.054±0.009 OUR FIT						
0.048±0.012 OUR AVERAGE						
0.05 ±0.02		TOET	73	HBC	+	5 π^+ p
0.09 ±0.04		TOET	73	HBC	0	5 π^+ p
0.03 ±0.02	8	DAMERI	72	HBC	–	11 π^- p
0.06 ±0.03	17	BARNHAM	71	HBC	+	3.7 π^+ p
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.020±0.004		[18] ESPIGAT	72	HBC	±	0.0 $\overline{p}p$

[18] Not averaged because of discrepancy between masses from $K\overline{K}$ and $\rho\pi$ modes.

$\Gamma(\pi^+\pi^-\pi^-)/\Gamma(\rho\pi)$ — Γ_8/Γ_1

VALUE	CL%	DOCUMENT ID		TECN	CHG	COMMENT
<0.12	90	ABRAMOVI...	70B	HBC	–	3.93 π^- p

$\Gamma(\pi^\pm\gamma)/\Gamma_{\text{total}}$ — Γ_6/Γ

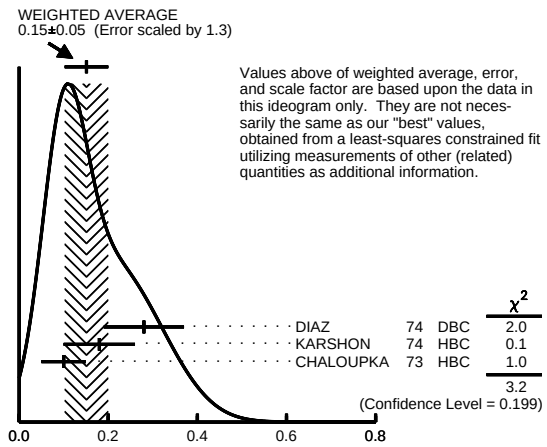
VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$0.005\ ^{+0.005}_{-0.003}$	[19] EISENBERG	72	HBC	4.3,5.25,7.5 γp

[19] Pion-exchange model used in this estimation.

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

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
0.15±0.05 OUR FIT Error includes scale factor of 1.3.						
0.15±0.05 OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below.						
0.28±0.09	60	DIAZ	74	DBC	0	6 $\pi^+ n$
0.18±0.08		[20] KARSHON	74	HBC		Avg. of above two
0.10±0.05	279	CHALOUPKA	73	HBC	–	3.9 π^- p
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.29±0.08	140	[20] KARSHON	74	HBC	0	4.9 π^+ p
0.10±0.04	60	[20] KARSHON	74	HBC	+	4.9 π^+ p
0.19±0.08		DEFOIX	73	HBC	0	0.7 $\overline{p}p$

[20] KARSHON 74 suggest an additional $I = 0$ state strongly coupled to $\omega\pi\pi$ which could explain discrepancies in branching ratios and masses. We use a central value and a systematic spread.



$\Gamma(\omega\pi\pi)/\Gamma(\rho\pi)$

$\Gamma(\eta'(958)\pi)/\Gamma(\eta\pi)$ — Γ_5/Γ_2

VALUE	DOCUMENT ID		TECN	COMMENT
0.040±0.007 OUR AVERAGE				
0.047±0.010±0.004	[21] BELADIDZE	93	VES	37π^- N → a_2^- N
0.034±0.008±0.005	BELADIDZE	92	VES	36π^- C → a_2^- C

[21] Using B(η' → $\pi^+\pi^-\eta$) = 0.441, B(η → $\gamma\gamma$) = 0.389 and B(η → $\pi^+\pi^-\pi^0$) = 0.236.

$a_2(1320)$ REFERENCES

AOYAGI 93 PL B314 246 — +Fukui, Hasegawa+ (BKEI Collab.)
ARMSTRONG 93C PL B307 394 — +Bettoni+ (FNAL, FERR, GENO, UCI, NWES+)
BELADIDZE 93 PL 313 276 — +Berdnikov, Bityukov+ (VES Collab.)
CONDO 93 PR D48 3045 — +Handler, Bugg+ (SLAC Hybrid Collab.)
ALDE 92B ZPHY C54 549 — +Binon+ (SERP, BELG, LANL, LAPP, PISA, KEK)
BELADIDZE 92 ZPHY C54 235 — +Bityukov, Borisov+ (VES Collab.)
ALBRECHT 90G ZPHY C48 183 — +Ehrlichmann, Harder+ (ARGUS Collab.)
ARMSTRONG 90 ZPHY C48 213 — +Benayoun, Beusch (WA76 Collab.)
BARU 90 ZPHY C48 581 — +Blinov, Blinov+ (MD-1 Collab.)
BEHREND 90C ZPHY C46 583 — +Criegee+ (CELLO Collab.)
BUTLER 90 PR D42 1368 — +Boyer+ (Mark II Collab.)
OEST 90 ZHPY C47 343 — +Olsson+ (JADE Collab.)
AUGUSTIN 89 NP B320 1 — +Cosme (DM2 Collab.)
VOROBYEV 88 SJNP 48 273 — +Golubev, Dolinsky, Druzhinin+ (NOVO)
Translated from YAF 48 436.
ALTHOFF 86 ZPHY C31 537 — +Boch, Foster, Bernardi+ (TASSO Collab.)
ANTREASYAN 86 PR D33 1847 — +Aschman, Besset, Bienlein+ (Crystal Ball Collab.)
BERGER 84C PL 149B 427 — +Klovning, Burger+ (PLUTO Collab.)
BEHREND 83B PL 125B 518 — +D'Agostini+ (CELLO Collab.)
FRAZER 83 Aachen Conf. (UCSD)
CIHANGIR 82 PL 117B 123 — +Berg, Biel, Chandlee+ (FNAL, MINN, ROCH)
CLELAND 82B NP B208 228 — +Delfosse, Dorsaz, Gloor (DURH, GEVA, LAUS, PITT)
EDWARDS 82F PL 110B 82 — +Partridge, Peck+ (CIT, HARV, PRIN, STAN, SLAC)
DELFOSSE 81 NP B183 349 — +Guisan, Martin, Muhlemann, Weill+ (GEVA, LAUS)
EVANGELISTA 81 NP B178 197 — + (BARI, BONN, CERN, DARE, LIVP+)
CHABAUD 80 NP B175 189 — +Hyams, Papadopoulou+ (CERN, MPIM, AMST)
DAUM 80C PL 89B 276 — +Hertzberger+ (AMST, CERN, CRAC, MPIM, OXF+) JP
BALTAY 78B PR D17 62 — +Cautis, Cohen, Csorna+ (COLU, BING)
CHABAUD 78 NP B145 349 — +Hyams, Jones, Weilhammer, Blum+ (CERN, MPIM)
FERRERSORIA 78 PL 74B 287 — +Treille+ (ORSAY, CERN, CDEF, EPOL)
HYAMS 78 NP B146 303 — +Jones, Weilhammer, Blum+ (CERN, MPIM, ATEN)
MARTIN 78D PL 74B 417 — +Ozmutlu, Baldi, Bohringer, Dorsaz+ (DURH, GEVA) JP
MAY 77 PR D16 1983 — +Abramson, Andrews, Busnello+ (ROCH, CORN)
FORINO 76 NC 35A 465 — +Gessaroli+ (BGNA, FIRZ, GENO, MILA, OXF, PAVI)
MARGULIE 76 PR D14 667 — +Kramer, Foley, Love, Lindenbaum+ (BNL, CUNY)
EMMS 75 PL 58B 117 — +Jones, Kinson, Stacey, Bell+ (BIRM, DURH, RHEL) JP
WAGNER 75 PL 58B 201 — +Tabak, Chew (LBL) JP
DIAZ 74 PRL 32 260 — +Dibianca, Fickinger, Anderson+ (CASE, CMU)
KARSHON 74 PRL 32 852 — +Mikenberg, Pitluck, Eisenberg, Ronat+ (REHO)
ANTIPOV 73 NP B63 175 — +Ascoli, Busnello, Focacci+ (CERN, SERP) JP
ANTIPOV 73C NP B63 153 — +Ascoli, Busnello, Focacci+ (CERN, SERP) JP
CHALOUPKA 73 PL 44B 211 — +Dobrzynski, Ferrando, Losty+ (CERN)
CONFORTO 73 PL 45B 154 — +Mobley, Key+ (EFI, FNAL, TNTO, WISC)
DEFOIX 73 PL 43B 141 — +Dobrzynski, Espigat, Nascimento+ (CDEF)
EISENSTEIN 73 PR D7 278 — +Schultz, Ascoli, Ioffredo+ (ILL)
KEY 73 PRL 30 503 — +Conforto, Mobley+ (TNTO, EFI, FNAL, WISC)
TOET 73 NP B63 248 — +Thuan, Major+ (NIJM, BONN, DURH, TORI)
DAMERI 72 NC 9A 1 — +Borzatta, Goussu+ (GENO, MILA, SACL)
EISENBERG 72 PR D5 15 — +Ballam, Dagan+ (REHO, SLAC, TELA)
ESPIGAT 72 NP B36 93 — +Ghesquiere, Lillestol, Montanet (CERN, CDEF)
FOLEY 72 PR D6 747 — +Love, Ozaki, Platner, Lindenbaum+ (BNL, CUNY)
ALSTON-... 71 PL 34B 156 — Alston-Garnjost, Barbaro, Buhl, Derenzo+ (LRL)
BARNHAM 71 PRL 26 1494 — +Abrams, Butler, Coyne, Goldhaber, Hall+ (LBL)
BINNIE 71 PL 36B 257 — +Camilleri, Duane, Faruqi, Burton+ (LOIC, SHMP)
BOWEN 71 PRL 26 1663 — +Earles, Faissler, Blieden+ (NEAS, STON)
GRAYER 71 PL 34B 333 — +Hyams, Jones, Schlein, Blum+ (CERN, MPIM)
ABRAMOVI... 70B NP B23 466 — Abramovich, Blumenfeld, Bruyant+ (CERN) JP
ALSTON-... 70 PL 33B 607 — Alston-Garnjost, Barbaro, Buhl, Derenzo+ (LRL)
BOECKMANN 70 NP B16 221 — +Major+ (BONN, DURH, NIJM, EPOL, TORI)
ASCOLI 68 PRL 20 1321 — +Crawley, Mortara, Shapiro, Bridges+ (ILL) JP
BOESEBECK 68 NP B4 501 — +Deutschmann+ (AACH, BERL, CERN)
CHUNG 68 PR 165 1491 — +Dahl, Kirz, Miller (LRL)
CONTE 67 NC 51A 175 — +Tomasini, Cords+ (GENO, HAMB, MILA, SACL)