Further States

NODE=M300

OMITTED FROM SUMMARY TABLE

NODE=M300

This section contains states observed by a single group or states poorly established that thus need confirmation.

QUANTUM NUMBERS, MASSES, WIDTHS, AND BRANCHING RATIOS

X(360) $I^G(J^{PC}) = ?^?(?^{?+})$

NODE=M300K08
NODE=M300K08

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
360±7±9	64 ± 18	2.3k	[1] ABRAAMYAN 09	CNTR	2.75 $dC \to \gamma\gamma X$

[1] Not seen in $pC \to \gamma\gamma X$ at 5.5 GeV/c.

NODE=M300K08;LINKAGE=AB

X(1070) $I^G(J^{PC}) = ?^?(0^{++})$

NODE=M300J07
NODE=M300J07

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID	COMMENT
1072±1	3.5 ± 0.5	[1] VLADIMIRSK...08	40 $\pi^- p \to K^0_S K^0_S n + \mathrm{m}\pi^0$

[1] Supersedes GRIGOR'EV 05.

NODE=M300J07;LINKAGE=VL

X(1110) $I^G(J^{PC}) = 0^+(\text{even}^{++})$

NODE=M300J30
NODE=M300J30

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1107±4	111 ± 8 ± 15	DAFTARI	87	DBC	0. $\overline{p} n \to \rho^- \pi^+ \pi^-$

f_0(1200–1600) $I^G(J^{PC}) = 0^+(0^{++})$

NODE=M300J98
NODE=M300J98

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1323± 8	237 ± 20	VLADIMIRSK...06		SPEC	40 $\pi^- p \to K^0_S K^0_S n$
1480^{+100}_{-150}	$1030^{+\ 80}_{-170}$	[1] ANISOVICH	03	SPEC	
$1530^{+\ 90}_{-250}$	560 ± 40	[2] ANISOVICH	03	SPEC	

OCCUR=2

[1] K-matrix pole from combined analysis of $\pi^- p \to \pi^0\pi^0 n$, $\pi^- p \to K\overline{K} n$, $\pi^+\pi^- \to \pi^+\pi^-$, $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$, $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, $K^0_S K^0_S \pi^0$, $K^+ K^0_S \pi^-$ at rest, $\overline{p}n \to \pi^-\pi^-\pi^+$, $K^0_S K^- \pi^0$, $K^0_S K^0_S \pi^-$ at rest.

NODE=M300;LINKAGE=KM

[2] K-matrix pole from combined analysis of $\pi^- p \to \pi^0\pi^0 n$, $\pi^- p \to K\overline{K} n$, $\overline{p}p \to \pi^0\pi^0\pi^0$, $\pi^0\eta\eta$, $\pi^0\pi^0\eta$ at rest.

NODE=M300;LINKAGE=MK

X(1420) $I^G(J^{PC}) = 2^+(0^{++})$

NODE=M300J61
NODE=M300J61

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1420±20	160 ± 10	FILIPPI	00	OBLX	0 $\overline{n} p \to \pi^+\pi^+\pi^-$

X(1545) $I^G(J^{PC}) = ?^?(?^{++})$

NODE=M300K07
NODE=M300K07

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID	COMMENT
1545±3	6.0 ± 2.5	[1] VLADIMIRSK...08	40 $\pi^- p \to K^0_S K^0_S n + \mathrm{m}\pi^0$

[1] Supersedes VLADIMIRSKII 00.

NODE=M300K07;LINKAGE=VL

X(1575) $I^G(J^{PC}) = ?^?(1^{--})$

NODE=M300J08
NODE=M300J08

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$1576^{+49}_{-55}{}^{+98}_{-91}$	$818^{+22}_{-23}{}^{+\ 64}_{-133}$	[1] ABLIKIM	06S	BES	$J/\psi \to K^+K^-\pi^0$

[1] A broad peak observed at K^+K^- invariant mass. Mass and width above are its pole position. The observed branching ratio is $\mathrm{B}(J/\psi \to X\pi^0)\ \mathrm{B}(X \to K^+K^-) = (8.5 \pm 0.6^{+2.7}_{-3.6}) \times 10^{-4}$.

NODE=M300J08;LINKAGE=AB

X(1600) $I^G(J^{PC}) = 2^+(2^{++})$

NODE=M300J99
NODE=M300J99

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1600±100	400 ± 200	[1] ALBRECHT	91F	ARG	10.2 $e^+e^- \to e^+e^- 2(\pi^+\pi^-)$

[1] Our estimate.

NODE=M300J99;LINKAGE=A

X(1650) $I^G(J^{PC}) = 0^-(?^{?-})$

NODE=M300J62
NODE=M300J62

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1652±7	<50	100	PROKOSHKIN 96	GAM2	32,38 $\pi p \to \omega\eta n$

X(1730) $I^G(J^{PC}) = ?^?(?^{?+})$

NODE=M300K06
NODE=M300K06

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1731.0±1.2±2.0	3.2 ± 0.8 ± 1.3	58	VLADIMIRSK...07	SPEC	40 $\pi^- p \to K^0_S K^0_S X$

f_2(1750) $I^G(J^{PC}) = 0^+(2^{++})$

NODE=M300JAM
NODE=M300JAM

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1755±10	67 ± 12	870	[1] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

$\Gamma(K\overline{K})$

NODE=M300JA1
NODE=M300JA1

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
17±5	870	[2] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

$\Gamma(\gamma\gamma)$

NODE=M300JA2
NODE=M300JA2

VALUE (keV)	EVTS	DOCUMENT ID	TECN	COMMENT
0.13±0.04	870	[2] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

$\Gamma(\pi\pi)$

NODE=M300JA3
NODE=M300JA3

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1.3±1.0	870	[2] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

$\Gamma(\eta\eta)$

NODE=M300JA4
NODE=M300JA4

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
2.0±0.5	870	[2] SCHEGELSKY 06A	RVUE	$\gamma\gamma \to K^0_S K^0_S$

[1] From analysis of L3 data at 91 and 183–209 GeV.
[2] From analysis of L3 data at 91 and 183–209 GeV and using SU(3) relations.

NODE=M300JAM;LINKAGE=SC
NODE=M300JA;LINKAGE=SC

X(1775) $I^G(J^{PC}) = 1^-(?^{-+})$

NODE=M300J60
NODE=M300J60

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1763±20	192 ± 60	CONDO	91	SHF	$\gamma p \to (p\pi^+)(\pi^+\pi^-\pi^-)$
1787±18	118 ± 60	CONDO	91	SHF	$\gamma p \to n\pi^+\pi^+\pi^-$

OCCUR=2

X(1850 - 3100) $I^G(J^{PC}) = ?^?(1^{--})$

NODE=M300K28
NODE=M300K28

$\Gamma(e^+e^-)\cdot B(X \to$ hadrons) (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<120	90	[1] ANASHIN	11	KEDR	$e^+e^- \to$ hadrons

[1] This limit is center-of-mass energy dependent. We quote the most stringent one.

NODE=M300K28;LINKAGE=AN

X(1855) $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J31
NODE=M300J31

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1856.6±5	20 ± 5	BRIDGES	86D	SPEC	0. $\overline{p}d \to \pi\pi N$

X(1870) $I^G(J^{PC}) = ?^?(2^{??})$

NODE=M300J45
NODE=M300J45

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1870±40	250 ± 30	ALDE	86D	GAM4	100 $\pi^- p \to 2\eta X$

a_3(1875) $I^G(J^{PC}) = 1^-(3^{++})$

NODE=M300J95
NODE=M300J95

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1874±43±96	385 ± 121 ± 114	CHUNG	02	B852	18.3 $\pi^- p \to \pi^+\pi^-\pi^- p$

$B(a_3(1875) \to f_2(1270)\pi)/B(a_3(1875) \to \rho\pi)$

NODE=M300B7

VALUE	DOCUMENT ID		TECN	COMMENT
0.8 ± 0.2	[1] CHUNG	02	B852	18.3 $\pi^- p \to \pi^+\pi^-\pi^- p$

[1] Using the observable fractions of 50.0% $\rho\pi$, 56.5% $f_2\pi$, and 11.8% $\rho_3\pi$.

NODE=M300B;LINKAGE=C1

$B(a_3(1875) \to \rho_3(1690)\pi)/B(a_3(1875) \to \rho\pi)$

NODE=M300B8

VALUE	DOCUMENT ID		TECN	COMMENT
0.9 ± 0.3	[1] CHUNG	02	B852	18.3 $\pi^- p \to \pi^+\pi^-\pi^- p$

[1] Using the observable fractions of 50.0% $\rho\pi$, 56.5% $f_2\pi$, and 11.8% $\rho_3\pi$.

NODE=M300B8;LINKAGE=C1

$h_1(1900)$ $I^G(J^{PC}) = 0^-(1^{+-})$

NODE=M300A13

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$1908\pm6^{+8}_{-4}$	$175\pm13^{+7}_{-16}$	ABLIKIM	24CB	BES3	$J/\psi \to \phi\eta\pi^0$

$a_1(1930)$ $I^G(J^{PC}) = 1^-(1^{++})$

NODE=M300J92

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1930^{+30}_{-70}	155 ± 45	ANISOVICH	01F	SPEC	2.0 $\overline{p}p \to 3\pi^0$, $\pi^0\eta$, $\pi^0\eta'$

$X(1935)$ $I^G(J^{PC}) = 1^+(1^{-?})$

NODE=M300J33

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1935 ± 20	215 ± 30	EVANGELIS...	79	OMEG	10,16 $\pi^- p \to \overline{p}pn$

$\rho_2(1940)$ $I^G(J^{PC}) = 1^+(2^{--})$

NODE=M300J85

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1940 ± 40	155 ± 40	[1] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0$, $\omega\eta\pi^0$, $\pi^+\pi^-$

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02.

NODE=M300J85;LINKAGE=AY

$\omega_3(1945)$ $I^G(J^{PC}) = 0^-(3^{--})$

NODE=M300J65

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1945 ± 20	115 ± 22	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta$, $\omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B.

NODE=M300J65;LINKAGE=AZ

$a_2(1950)$ $I^G(J^{PC}) = 1^-(2^{++})$

NODE=M300K24

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1950^{+30}_{-70}	180^{+30}_{-70}	[1] ANISOVICH	01F	SPEC	1.96–2.41 $\overline{p}p$

[1] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, and ANISOVICH 01F.

NODE=M300K24;LINKAGE=AN

$\omega(1960)$ $I^G(J^{PC}) = 0^-(1^{--})$

NODE=M300J79

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1960 ± 25	195 ± 60	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta$, $\omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B.

NODE=M300J79;LINKAGE=AZ

$b_1(1960)$ $I^G(J^{PC}) = 1^+(1^{+-})$

NODE=M300J67

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1960 ± 35	230 ± 50	[1] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0$, $\omega\eta\pi^0$, $\pi^+\pi^-$

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02.

NODE=M300J67;LINKAGE=AY

$h_1(1965)$ $I^G(J^{PC}) = 0^-(1^{+-})$

NODE=M300J64

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1965 ± 45	345 ± 75	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta$, $\omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J64;LINKAGE=AZ

$f_1(1970)$ $I^G(J^{PC}) = 0^+(1^{++})$

NODE=M300J1
NODE=M300J1

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
1971±15	240 ± 45	ANISOVICH	00J	SPEC

$X(1970)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J46
NODE=M300J46

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1970±10	40 ± 20	CHLIAPNIK...	80	HBC	32 $K^+ p \to 2K^0_S 2\pi X$

$X(1975)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J47
NODE=M300J47

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1973±15	80	30	CASO	70	HBC	11.2 $\pi^- p \to \rho 2\pi$

$\omega_2(1975)$ $I^G(J^{PC}) = 0^-(2^{--})$

NODE=M300J81
NODE=M300J81

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1975±20	175 ± 25	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta, \omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J81;LINKAGE=AZ

$a_2(1990)$ $I^G(J^{PC}) = 1^-(2^{++})$

NODE=M300J2
NODE=M300J2

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2050±10±40	190 ± 22 ± 100	18k	[1] SCHEGELSKY	06	RVUE	$\gamma\gamma \to \pi^+\pi^-\pi^0$
2003±10±19	249 ± 23 ± 32		LU	05	B852	18 $\pi^- p \to \omega\pi^-\pi^0 p$

[1] From analysis of L3 data at 183–209 GeV. NODE=M300J2;LINKAGE=SC

$\Gamma(\gamma\gamma)\,\Gamma(\pi^+\pi^-\pi^0)\,/\,\Gamma(\text{total})$

NODE=M300J2G
NODE=M300J2G

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.11±0.04±0.05	18k	[1] SCHEGELSKY	06	RVUE	$\gamma\gamma \to \pi^+\pi^-\pi^0$

[1] From analysis of L3 data at 183–209 GeV. NODE=M300J2G;LINKAGE=SC

$\rho(2000)$ $I^G(J^{PC}) = 1^+(1^{--})$

NODE=M300J77
NODE=M300J77

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2000±30	260 ± 45	[1] BUGG	04C	RVUE	Compilation
∼ 1988	∼ 244	HASAN	94	RVUE	$\overline{p}p \to \pi\pi$

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300;LINKAGE=AY

$f_2(2000)$ $I^G(J^{PC}) = 0^+(2^{++})$

NODE=M300J25
NODE=M300J25

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2001±10	312 ± 32	ANISOVICH	00J	SPEC	
∼ 1996	∼ 134	HASAN	94	RVUE	$\overline{p}p \to \pi\pi$

$X(2000)$ $I^G(J^{PC}) = 1^-(?^{?+})$

NODE=M300K01
NODE=M300K01

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
1964±35	225 ± 50	[1] ARMSTRONG	93D	E760		$\overline{p}p \to 3\pi^0 \to 6\gamma$
∼ 2100	∼ 500	[1] ANTIPOV	77	CIBS	−	25 $\pi^- p \to p\pi^-\rho_3$
2214±15	355 ± 21	[2] BALTAY	77	HBC	0	15 $\pi^- p \to \Delta^{++} 3\pi$
2080±40	340 ± 80	KALELKAR	75	HBC	+	15 $\pi^+ p \to p\pi^+\rho_3$

[1] Cannot determine spin to be 3. NODE=M300K01;LINKAGE=AA
[2] BALTAY 77 favors $J^P = ,3^+$. NODE=M300K01;LINKAGE=B

$X(2000)$ $I^G(J^{PC}) = ?^?(4^{++})$

NODE=M300J97
NODE=M300J97

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
1998±3±5	<15	VLADIMIRSK...	03	SPEC	$\pi^- p \to K^0_S K^0_S MM$

X(2000) $I^G(J^{PC}) = 0^-(1^{--})$

NODE=M300A14
NODE=M300A14

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$1992\pm12^{+15}_{-6}$	$132\pm22^{+17}_{-4}$	ABLIKIM	24CB	BES3	$J/\psi \to \phi\eta\pi^0$

η(2010) $I^G(J^{PC}) = 0^+(0^{-+})$

NODE=M300J5
NODE=M300J5

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2010^{+35}_{-60}	270 ± 60	ANISOVICH	00J	SPEC

π_1(2015) $I^G(J^{PC}) = 1^-(1^{-+})$

NODE=M300J05
NODE=M300J05

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$2014\pm20\pm16$	$230\pm32\pm73$	145k	LU	05	B852	18 $\pi^- p \to \omega\pi^-\pi^0 p$
$2001\pm30\pm92$	$333\pm52\pm49$	69k	KUHN	04	B852	18 $\pi^- p \to \eta\pi^+\pi^-\pi^- p$

a_0(2020) $I^G(J^{PC}) = 1^-(0^{++})$

NODE=M300J6
NODE=M300J6

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2025 ± 30	330 ± 75	ANISOVICH	99C	SPEC

X(2020) $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J34
NODE=M300J34

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2015 ± 3	10 ± 4	FERRER	99	RVUE	$\pi p \to p p \overline{p} \pi(\pi)$

h_3(2025) $I^G(J^{PC}) = 0^-(3^{+-})$

NODE=M300J78
NODE=M300J78

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2025 ± 20	145 ± 30	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta, \omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B.

NODE=M300J78;LINKAGE=AZ

b_3(2030) $I^G(J^{PC}) = 1^+(3^{+-})$

NODE=M300J69
NODE=M300J69

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2032 ± 12	117 ± 11	[1] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0, \omega\eta\pi^0, \pi^+\pi^-$

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02.

NODE=M300J69;LINKAGE=AY

a_2(2030) $I^G(J^{PC}) = 1^-(2^{++})$

NODE=M300K23
NODE=M300K23

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2030 ± 20	205 ± 30	[1] ANISOVICH	01F	SPEC	1.96–2.41 $\overline{p}p$

[1] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, and ANISOVICH 01F.

NODE=M300K23;LINKAGE=AN

a_3(2030) $I^G(J^{PC}) = 1^-(3^{++})$

NODE=M300K20
NODE=M300K20

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2031 ± 12	150 ± 18	[1] ANISOVICH	01F	SPEC	1.96–2.41 $\overline{p}p$

[1] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, and ANISOVICH 01F.

NODE=M300K20;LINKAGE=AN

η_2(2030) $I^G(J^{PC}) = 0^+(2^{-+})$

NODE=M300J8
NODE=M300J8

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
$2030\pm5\pm15$	$205\pm10\pm15$	ANISOVICH	00E	SPEC

$B(a_2\pi)_{L=0}/B(a_2\pi)_{L=2}$

NODE=M300B1
NODE=M300B1

VALUE	DOCUMENT ID		TECN	COMMENT
0.05 ± 0.03	[1] ANISOVICH	11	SPEC	0.9–1.94 $p\overline{p}$

[1] Reanalysis of ADOMEIT 96 and ANISOVICH 00E.

NODE=M300B1;LINKAGE=AN

$B(a_0\pi)/B(a_2\pi)_{L=2}$

NODE=M300B2
NODE=M300B2

VALUE	DOCUMENT ID		TECN	COMMENT
0.10 ± 0.08	[1] ANISOVICH	11	SPEC	0.9–1.94 $p\overline{p}$

[1] Reanalysis of ADOMEIT 96 and ANISOVICH 00E.

NODE=M300B2;LINKAGE=AN

$B(f_2\eta)/B(a_2\pi)_{L=2}$

NODE=M300B3
NODE=M300B3

VALUE	DOCUMENT ID		TECN	COMMENT
0.13 ± 0.06	[1] ANISOVICH	11	SPEC	0.9–1.94 $p\overline{p}$

[1] Reanalysis of ADOMEIT 96 and ANISOVICH 00E.

NODE=M300B3;LINKAGE=AN

$f_3(2050)$ $I^G(J^{PC}) = 0^+(3^{++})$

NODE=M300J7
NODE=M300J7

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2048 ± 8	213 ± 34	ANISOVICH	00J	SPEC	2.0 $p\overline{p}\to\eta\pi^0\pi^0$

$f_0(2060)$ $I^G(J^{PC}) = 0^+(0^{++})$

NODE=M300J59
NODE=M300J59

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
~ 2050	~ 120	[1] OAKDEN	94	RVUE	0.36–1.55 $\overline{p}p\to\pi\pi$
~ 2060	~ 50	[1] OAKDEN	94	RVUE	0.36–1.55 $\overline{p}p\to\pi\pi$

OCCUR=2

[1] See SEMENOV 99 and KLOET 96.

NODE=M300J;LINKAGE=A

$\pi(2070)$ $I^G(J^{PC}) = 1^-(0^{-+})$

NODE=M300J91
NODE=M300J91

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2070 ± 35	310^{+100}_{-50}	ANISOVICH	01F	SPEC	2.0 $\overline{p}p\to 3\pi^0$, $\pi^0\eta$, $\pi^0\eta'$

$X(2080)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J35
NODE=M300J35

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2080 ± 10	110 ± 20	KREYMER	80	STRC	13 $\pi^-d\to p\overline{p}n(n_s)$

$X(2080)$ $I^G(J^{PC}) = ?^?(3^{-?})$

NODE=M300J37
NODE=M300J37

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2080 ± 10	190 ± 15	ROZANSKA	80	SPRK	18 $\pi^-p\to p\overline{p}n$

$K_1(2085)$ $I^G(J^{PC}) = ?^?(1^{+?})$

NODE=M300J01
NODE=M300J01

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$2084^{+4}_{-2}\pm9$	$58^{+4}_{-3}\pm25$	[1,2] ABLIKIM	23BG	BES3	$e^+e^-\to pK^-\overline{\Lambda}$
$2075\pm12\pm5$	$90\pm35\pm9$	[3] ABLIKIM	04J	BES2	$J/\psi\to K^-p\overline{\Lambda}$

[1] The reported mass and width are the pole positions in the complex (M, Γ) plane.

NODE=M300J01;LINKAGE=A

[2] Signal observed with a statistical significance $>20\sigma$ comes from 3883 candidate events. Spin parity determined to be $J^P=1^+$ with a statistical significance $>5\sigma$ over 0^-, 1^-, 2^+ hypotheses, and in the range within 3.1–7.5 σ with respect to 2^-.

NODE=M300J01;LINKAGE=B

[3] From a fit in the region $M_{p\overline{\Lambda}}-M_p-M_\Lambda<150$ MeV. S-wave in the $p\overline{\Lambda}$ system preferred. A similar near-threshold enhancement in the $p\overline{\Lambda}$ system is observed in $B^+\to p\overline{\Lambda}\overline{D}^0$ by CHEN 11F.

NODE=M300J01;LINKAGE=AB

$a_1(2095)$ $I^G(J^{PC}) = 1^-(1^{++})$

NODE=M300J04
NODE=M300J04

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$2096\pm17\pm121$	$451\pm41\pm81$	69k	KUHN	04	B852	18 $\pi^-p\to\eta\pi^+\pi^-\pi^-p$

$B(a_1(2095)\to f_1(1285)\pi)$ / $B(a_1(2095)\to a_1(1260))$

NODE=M300B03
NODE=M300B03

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
3.18 ± 0.64	69k	KUHN	04	B852	18 $\pi^-p\to\eta\pi^+\pi^-\pi^-p$

$\eta(2100)$ $I^G(J^{PC}) = 0^+(0^{-+})$

NODE=M300J48
NODE=M300J48

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2050^{+30+75}_{-24-26}	$250^{+36+181}_{-30-164}$		[1] ABLIKIM	16N	BES3	$J/\psi\to\gamma K^+K^-K^+K^-$
2103 ± 50	187 ± 75	586	[2] BISELLO	89B	DM2	$J/\psi\to 4\pi\gamma$

[1] From a partial wave analysis of $J/\psi \to \gamma\phi\phi$, for which the primary signal is $\eta(2225) \to \phi\phi$, and that also finds significant signals for for 0^{-+} phase space, $f_0(2100)$, $f_2(2010)$, $f_2(2300)$, $f_2(2340)$, and a previously unseen 0^{-+} state $X(2500)$ ($M = 2470^{+15}_{-19}{}^{+101}_{-23}$ MeV, $\Gamma = 230^{+64}_{-35}{}^{+56}_{-33}$ MeV). NODE=M300J48;LINKAGE=A

[2] ASTON 81B sees no peak, has 850 events in Ajinenko+Barth bins. ARESTOV 80 sees no peak. NODE=M300J;LINKAGE=A1

X(2100) $I^G(J^{PC}) = ?^?(0^{??})$

NODE=M300J49

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2100 ± 40	250 ± 40	ALDE	86D	GAM4	$100\ \pi^- p \to 2\eta X$

X(2110) $I^G(J^{PC}) = 1^+(3^{-?})$

NODE=M300J36

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2110 ± 10	330 ± 20	EVANGELIS...	79	OMEG	$10,16\ \pi^- p \to \overline{p} p n$

X(2120) $I^G(J^{PC}) = ?^?(0^{??})$

NODE=M300A07

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$2122.4 \pm 6.7^{+4.7}_{-2.7}$	$83 \pm 16^{+31}_{-11}$	647	ABLIKIM	11C	BES3	$J/\psi \to \gamma\pi^+\pi^-\eta'$

ω(2120) or φ(2120) $I^G(J^{PC}) = 0^-(?^{--})$

NODE=M300K43

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$2119 \pm 11 \pm 15$	$69 \pm 30 \pm 5$	[1] ABLIKIM	24AA	BES3	$e^+e^- \to \pi^+\pi^-\pi^0$

[1] From a fit with more than 5σ to the Born cross section line shapes of $e^+e^- \to \rho\pi$ and $e^+e^- \to \rho(1450)\pi$. NODE=M300K43;LINKAGE=A

f_2(2140) $I^G(J^{PC}) = 0^+(2^{++})$

NODE=M300J50

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2141 ± 12	49 ± 28	389	GREEN	86	MPSF	$400\ pA \to 4KX$

X(2150) $I^G(J^{PC}) = ?^?(2^{+?})$

NODE=M300J38

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2150 ± 10	260 ± 10	ROZANSKA	80	SPRK	$18\ \pi^- p \to p\overline{p} n$

a_2(2175) $I^G(J^{PC}) = 1^-(2^{++})$

NODE=M300J88

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2175 ± 40	310^{+90}_{-45}	ANISOVICH	01F	SPEC	$2.0\ \overline{p} p \to 3\pi^0, \pi^0\eta, \pi^0\eta'$

η(2190) $I^G(J^{PC}) = 0^+(0^{-+})$

NODE=M300J13

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2190 ± 50	850 ± 100	BUGG	99	BES

ω_2(2195) $I^G(J^{PC}) = 0^-(2^{--})$

NODE=M300J82

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2195 ± 30	225 ± 40	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta, \omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J82;LINKAGE=AZ

X(2210) $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J51

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2210^{+79}_{-21}	203^{+437}_{-87}	EVANGELIS...	79B	OMEG	$10\ \pi^- p \to K^+K^- n$
2207 ± 22	130	CASO	70	HBC	$11.2\ \pi^- p$

X_2(2210) $I^G(J^{PC}) = 0^+(2^{++})$

NODE=M300A05

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2210 ± 60	360 ± 120	[1] KLEMPT	22	RVUE	$J/\psi \to \gamma\pi^0\pi^0, \gamma K^0_S K^0_S$

[1] Fit of the tensor partial waves from BES3 in the multipole basis. Might be a cluster of $J^{PC} = 2^{++}$ resonances. The ratio of decay widths $K K^- / \pi\pi$ is 0.23 ± 0.05. NODE=M300A05;LINKAGE=A

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h_1(2215) $I^G(J^{PC}) = 0^-(1^{+-})$

NODE=M300J27
NODE=M300J27

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2215±40	325 ± 55	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta, \omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J27;LINKAGE=AZ

ρ_2(2225) $I^G(J^{PC}) = 1^+(2^{--})$

NODE=M300J70
NODE=M300J70

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2225±35	$335^{+100}_{-\ 50}$	[1] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0, \omega\eta\pi^0, \pi^+\pi^-$

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J70;LINKAGE=AY

ρ_4(2230) $I^G(J^{PC}) = 1^+(4^{--})$

NODE=M300J74
NODE=M300J74

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2230±25	210 ± 30	[1] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0, \omega\eta\pi^0, \pi^+\pi^-$

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J74;LINKAGE=AY

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b_1(2240) $I^G(J^{PC}) = 1^+(1^{+-})$

NODE=M300J87
NODE=M300J87

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2240±35	320 ± 85	[1] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0, \omega\eta\pi^0, \pi^+\pi^-$

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J87;LINKAGE=AY

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f_2(2240) $I^G(J^{PC}) = 0^+(2^{++})$

NODE=M300K26
NODE=M300K26

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2240±15	241 ± 30	[1] ANISOVICH	00J	SPEC	1.92–2.41 $p\overline{p}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
∼ 2226	∼ 226	HASAN	94	RVUE	$p\overline{p} \to \pi\pi$

[1] From the combined analysis of ANISOVICH 99C, ANISOVICH 99F, ANISOVICH 99J, ANISOVICH 99K, and ANISOVICH 00B. See also ANISOVICH 12. NODE=M300K26;LINKAGE=AN

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b_3(2245) $I^G(J^{PC}) = 1^+(3^{+-})$

NODE=M300K10
NODE=M300K10

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*
2245±50	320 ± 70	[1] BUGG	04C	RVUE

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300K10;LINKAGE=AY

η_2(2250) $I^G(J^{PC}) = 0^+(2^{-+})$

NODE=M300J17
NODE=M300J17

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*
2248±20	280 ± 20	ANISOVICH	00I	SPEC
2267±14	290 ± 50	ANISOVICH	00J	SPEC

π_4(2250) $I^G(J^{PC}) = 1^-(4^{-+})$

NODE=M300J73
NODE=M300J73

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2250±15	215 ± 25	ANISOVICH	01F	SPEC	2.0 $\overline{p}p \to 3\pi^0, \pi^0\eta, \pi^0\eta'$

ω_4(2250) $I^G(J^{PC}) = 0^-(4^{--})$

NODE=M300J84
NODE=M300J84

MASS (MeV)	*WIDTH* (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2250±30	150 ± 50	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta, \omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J84;LINKAGE=AZ

ω_5(2250) $I^G(J^{PC}) = 0^-(5^{--})$ NODE=M300K11

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2250±70	320 ± 95	[1] BUGG	04	RVUE

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300;LINKAGE=AZ

ω_3(2255) $I^G(J^{PC}) = 0^-(3^{--})$ NODE=M300J66

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2255±15	175 ± 30	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta, \omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J66;LINKAGE=AZ

a_4(2255) $I^G(J^{PC}) = 1^-(4^{++})$ NODE=M300K21

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2237± 5	291 ± 12	UMAN	06	E835	5.2 $\overline{p}p \to \eta\eta\pi^0$
2255±40	330^{+110}_{-50}	[1] ANISOVICH	01F	SPEC	1.96–2.41 $\overline{p}p$

[1] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, and ANISOVICH 01F. NODE=M300K21;LINKAGE=AN

a_2(2255) $I^G(J^{PC}) = 1^-(2^{++})$ NODE=M300K22

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2255±20	230 ± 15	[1] ANISOVICH	01G	SPEC	1.96–2.41 $\overline{p}p$

[1] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, ANISOVICH 01F, and ANISOVICH 01G. NODE=M300K22;LINKAGE=AN

X(2260) $I^G(J^{PC}) = 0^+(4^{+?})$ NODE=M300J40

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2260±20	400 ± 100	EVANGELIS...	79	OMEG	10,16 $\pi^- p \to \overline{p}pn$

ρ(2270) $I^G(J^{PC}) = 1^+(1^{--})$ NODE=M300J86

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2265±40	325 ± 80	[1] ANISOVICH	02	SPEC	0.6–1.9 $p\overline{p} \to \omega\pi^0, \omega\eta\pi^0, \pi^+\pi^-$
2280±50	440 ± 110	ATKINSON	85	OMEG	20–70 $\gamma p \to p\omega\pi^+\pi^-\pi^0$

[1] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02. NODE=M300J86;LINKAGE=AY

a_1(2270) $I^G(J^{PC}) = 1^-(1^{++})$ NODE=M300J72

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2270^{+55}_{-40}	305^{+70}_{-40}	ANISOVICH	01F	SPEC	2.0 $\overline{p}p \to 3\pi^0, \pi^0\eta, \pi^0\eta'$

h_3(2275) $I^G(J^{PC}) = 0^-(3^{+-})$ NODE=M300J28

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2275±25	190 ± 45	[1] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta, \omega\pi^0\pi^0$

[1] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J28;LINKAGE=AZ

a_3(2275) $I^G(J^{PC}) = 1^-(3^{++})$ NODE=M300K19

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2275±35	350^{+100}_{-50}	[1] ANISOVICH	01G	SPEC	1.96–2.41 $\overline{p}p$

[1] From the combined analysis of ANISOVICH 99C, ANISOVICH 99E, ANISOVICH 01F, and ANISOVICH 01G. NODE=M300K19;LINKAGE=AN

π_2(2285) $I^G(J^{PC}) = 1^-(2^{-+})$ NODE=M300K25

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2285±20±25	250 ± 20 ± 25	[1] ANISOVICH	11	SPEC	0.9–1.94 $p\overline{p}$

[1] Reanalysis of ADOMEIT 96 and ANISOVICH 00E. NODE=M300K25;LINKAGE=AN

ω_3(2285) $I^G(J^{PC}) = 0^-(3^{--})$ NODE=M300J83

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2278±28	224 ± 50	[1] BUGG	04A	RVUE	
2285±60	230 ± 40	[2] ANISOVICH	02B	SPEC	0.6–1.9 $p\overline{p} \to \omega\eta, \omega\pi^0\pi^0$

[1] Partial wave analysis of the data on $p\overline{p} \to \overline{\Lambda}\Lambda$ from BARNES 00. NODE=M300J83;LINKAGE=BU
[2] From the combined analysis of ANISOVICH 00D, ANISOVICH 01C, and ANISOVICH 02B. NODE=M300J83;LINKAGE=AZ

ω(2290) $I^G(J^{PC}) = 0^-(1^{--})$ NODE=M300J02

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2290±20	275 ± 35	[1] BUGG	04A	RVUE

[1] Partial wave analysis of the data on $p\overline{p} \to \overline{\Lambda}\Lambda$ from BARNES 00. NODE=M300J02;LINKAGE=BU

f_2(2295) $I^G(J^{PC}) = 0^+(2^{++})$ NODE=M300K27

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2293±13	216 ± 37	[1] ANISOVICH	00J	SPEC	1.92–2.41 $p\overline{p}$

[1] From the combined analysis of ANISOVICH 99C, ANISOVICH 99F, ANISOVICH 99J, ANISOVICH 99K, and ANISOVICH 00B. See also ANISOVICH 12. NODE=M300K27;LINKAGE=AN

f_3(2300) $I^G(J^{PC}) = 0^+(3^{++})$ NODE=M300J19

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2334±25	200 ± 20	[1] BUGG	04A	RVUE

[1] Partial wave analysis of the data on $p\overline{p} \to \overline{\Lambda}\Lambda$ from BARNES 00. NODE=M300J19;LINKAGE=BU

h_1(2300) $I^G(J^{PC}) = 0^-(1^{+-})$ NODE=M300A18

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2316±9±30	89 ± 15 ± 26	[1] ABLIKIM	25E	BES3

[1] From a partial wave analysis of $\psi(2S) \to \phi\eta\eta'$. Reported in $\psi(2S) \to h_1(2300)\eta'$ with 9.6σ significance and in $\psi(2S) \to h_1(2300)\eta$ at 5.6σ. NODE=M300A18;LINKAGE=A

f_1(2310) $I^G(J^{PC}) = 0^+(1^{++})$ NODE=M300J23

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2310±60	255 ± 70	ANISOVICH	00J	SPEC

η(2320) $I^G(J^{PC}) = 0^+(0^{-+})$ NODE=M300J18

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN
2320±15	230 ± 35	[1] ANISOVICH	00M	SPEC

[1] From the combined analysis of $\overline{p}p \to \eta\eta\eta$ from ANISOVICH 00M and $\overline{p}p \to \eta\pi^0\pi^0$ from ANISOVICH 00J. NODE=M300;LINKAGE=B

η_4(2330) $I^G(J^{PC}) = 0^+(4^{-+})$ NODE=M300J22

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2328±38	240 ± 90	ANISOVICH	00J	SPEC	2.0 $p\overline{p} \to \eta\pi^0\pi^0$

ω(2330) $I^G(J^{PC}) = 0^-(1^{--})$ NODE=M300J53

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2330±30	435 ± 75	ATKINSON	88	OMEG	25–50 $\gamma p \to \rho^\pm\rho^0\pi^\mp$

$T^*_{c\overline{s}0}$(2330) $I(J^P) = 1(0^+)$ NODE=M300K52

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2327±13±13	$96 \pm 16^{+170}_{-23}$	[1] AAIJ	24AQ	LHCB	$D_{s1}(2460)^+ \to D_s^+\pi^+\pi^-$

[1] From a K-matrix model analysis including $f_0(500)$ and $T^*_{c\bar{s}0}$. The $T^*_{c\bar{s}0}$ resonance is claimed by one experiment only. NODE=M300K52;LINKAGE=A

$X(2340)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J54

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2340 ± 20	180 ± 60	126	[1] BALTAY	75	HBC	$15\ \pi^+ p \to p5\pi$

[1] Dominant decay into $\rho^0\rho^0\pi^+$. BALTAY 78 finds confirmation in $2\pi^+\pi^-2\pi^0$ events which contain $\rho^+\rho^0\pi^0$ and $2\rho^+\pi^-$. NODE=M300J;LINKAGE=B1

$\pi(2360)$ $I^G(J^{PC}) = 1^-(0^{-+})$

NODE=M300J90

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2360 ± 25	300^{+100}_{-50}	ANISOVICH	01F	SPEC	$2.0\ \bar{p}p \to 3\pi^0, \pi^0\eta, \pi^0\eta'$

$X(2360)$ $I^G(J^{PC}) = ?^?(4^{+?})$

NODE=M300J42

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2360 ± 10	430 ± 30	ROZANSKA	80	SPRK	$18\ \pi^- p \to p\bar{p}n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2356\pm\ 7\pm15$	$304\pm28\pm54$	[1] ABLIKIM	23AY	BES3	$e^+e^- \to (\Lambda\bar{\Lambda})\eta$

[1] Assuming $J^{PC} = 1^{--}$. NODE=M300J42;LINKAGE=A

$X(2440)$ $I^G(J^{PC}) = ?^?(5^{-?})$

NODE=M300J43

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2440 ± 10	310 ± 20	ROZANSKA	80	SPRK	$18\ \pi^- p \to p\bar{p}n$

$a_6(2450)$ $I^G(J^{PC}) = 1^-(6^{++})$

NODE=M300K12

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2450 ± 130	400 ± 250	CLELAND	82B	SPEC	$50\ \pi p \to K^0_S K^\pm p$

$X(2540)$ $I^G(J^{PC}) = 0^+(0^{++})$

NODE=M300K30

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$2539\pm14^{+38}_{-14}$	$274^{+77}_{-61}{}^{+126}_{-163}$	UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$

$\Gamma(\gamma\gamma) \times B(K\bar{K})$

NODE=M300K3G

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
$40^{+9}_{-7}{}^{+17}_{-40}$	UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$

$X(2600)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300A01

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$2618.3\pm2.0^{+16.3}_{-1.4}$	$195\pm5^{+26}_{-17}$	ABLIKIM	22G	BES3	$J/\psi \to \gamma\pi^+\pi^-\eta'$

$B(J/\psi \to \gamma X(2600)) \times B(X(2600) \to f_0(1500)\eta') \times B(f_0(1500) \to \pi^+\pi^-)$

NODE=M300A02

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$3.09\pm0.21^{+1.14}_{-0.77}$	[1] ABLIKIM	22G	BES3	$J/\psi \to \gamma\pi^+\pi^-\eta'$

[1] The $\pi^+\pi^-$ mass spectrum is described by a coherent sum of two Breit-Wigner resonances, $f_0(1500)$ and a new $X(1540)$ with mass $1540.2\pm7.0^{+36.3}_{-6.1}$ MeV and width $157\pm19^{+11}_{-77}$ MeV. NODE=M300A02;LINKAGE=A

$B(J/\psi \to \gamma X(2600)) \times B(X(2600) \to X(1540)\eta') \times B(X(1540) \to \pi^+\pi^-)$

NODE=M300A03

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
$2.69\pm0.19^{+0.38}_{-1.21}$	[1] ABLIKIM	22G	BES3	$J/\psi \to \gamma\pi^+\pi^-\eta'$

[1] The $\pi^+\pi^-$ mass spectrum is described by a coherent sum of two Breit-Wigner resonances, $f_0(1500)$ and a new $X(1540)$ with mass $1540.2 \pm 7.0^{+36.3}_{-6.1}$ MeV and width $157 \pm 19^{+11}_{-77}$ MeV. NODE=M300A03;LINKAGE=A

$K_0^*(2600)$ $I(J^P) = 1/2(0^+)$

NODE=M300A09
NODE=M300A09

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$2662\pm59\pm201$	$480 \pm 47 \pm 72$	[1] AAIJ	23AH	LHCB	$B^+ \to K^+(K_S^0 K\pi)$

[1] From Dalitz plot analyses of $\eta_c(1S,2S) \to K_S^0 K^+\pi^-$ + c.c.. NODE=M300A09;LINKAGE=A

$X(2632)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J03
NODE=M300J03

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2635.2 ± 3.3		[1] EVDOKIMOV	04	SELX	$X(2632) \to D_s^+\eta$
2631.6 ± 2.1	< 17	[2] EVDOKIMOV	04	SELX	$X(2632) \to D^0 K^+$

OCCUR=2

[1] From a mass difference to D_s^+ of 666.9 ± 3.3 MeV. NODE=M300J03;LINKAGE=EV

[2] From a mass difference to D^0 of 767.0 ± 2.0 MeV. NODE=M300J03;LINKAGE=ED

$B(X(2632) \to D^0K^+)/B(X(2632) \to D_s^+\eta)$

NODE=M300B01
NODE=M300B01

VALUE	DOCUMENT ID		TECN
0.14 ± 0.06	[1] EVDOKIMOV	04	SELX

[1] Possible interpretation of this decay pattern is discussed by YASUI 07. NODE=M300B01;LINKAGE=YA

$X(2680)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J55
NODE=M300J55

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2676 ± 27	150	CASO	70	HBC	$11.2\ \pi^- p \to \rho^-\pi^+\pi^- p$

$X(2710)$ $I^G(J^{PC}) = ?^?(6^{+?})$

NODE=M300J44
NODE=M300J44

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2710 ± 20	170 ± 40	ROZANSKA	80	SPRK	$18\ \pi^- p \to p\overline{p}n$

$X(2750)$ $I^G(J^{PC}) = ?^?(7^{-?})$

NODE=M300J56
NODE=M300J56

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
2747 ± 32	195 ± 75	DENNEY	83	LASS	$10\ \pi^+ p \to K^+K^-\pi^+ p$

$f_6(3100)$ $I^G(J^{PC}) = 0^+(6^{++})$

NODE=M300J06
NODE=M300J06

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
3100 ± 100	700 ± 130	BINON	05	GAMS	$33\ \pi^- p \to \eta\eta n$

$X(3250)$ $I^G(J^{PC}) = ?^?(?^{??})$ 3-Body Decays

NODE=M300J57
NODE=M300J57

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$3250\pm8\pm20$	45 ± 18	ALEEV	93	BIS2	$X(3250) \to \Lambda\overline{p}K^+$
$3265\pm7\pm20$	40 ± 18	ALEEV	93	BIS2	$X(3250) \to \overline{\Lambda}pK^-$

OCCUR=2

$X(3250)$ $I^G(J^{PC}) = ?^?(?^{??})$ 4-Body Decays

NODE=M300J58
NODE=M300J58

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$3245\pm8\pm20$	25 ± 11	ALEEV	93	BIS2	$X(3250) \to \Lambda\overline{p}K^+\pi^\pm$
$3250\pm9\pm20$	50 ± 20	ALEEV	93	BIS2	$X(3250) \to \overline{\Lambda}pK^-\pi^\mp$
$3270\pm8\pm20$	25 ± 11	ALEEV	93	BIS2	$X(3250) \to K_S^0 p\overline{p}K^\pm$

OCCUR=2
OCCUR=3

$X(3350)$ $I^G(J^{PC}) = ?^?(?^{??})$

NODE=M300J09
NODE=M300J09

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$3350^{+10}_{-20}\pm20$	$70^{+40}_{-30} \pm 40$	50 ± 10	[1] GABYSHEV	06A	BELL	$B^- \to \Lambda_c^+\overline{p}\pi^-$

[1] A similar enhancement in the $\Lambda_c^+ \overline{p}$ final state is also reported by BABAR collaboration in AUBERT 10H. NODE=M300J09;LINKAGE=AU

$\psi(3760)$ $I^G(J^{PC}) = ?^?(1^{--})$ NODE=M300A10

MASS (MeV)	DOCUMENT ID		TECN	COMMENT
3751.9±3.8±2.8	[1] ABLIKIM	24BO	BES3	$e^+ e^- \to$ hadrons
~ 3740	[1] ABLIKIM	24E	BES3	$e^+ e^- \to$ light hadrons

[1] Fit to cross sections for $\sqrt{s}$ = 3645 to 3871 MeV. NODE=M300A10;LINKAGE=A

$\psi(3780)$ $I^G(J^{PC}) = ?^?(1^{--})$ NODE=M300A11

MASS (MeV)	DOCUMENT ID		TECN	COMMENT
3778.7±0.5±0.3	[1] ABLIKIM	24BO	BES3	$e^+ e^- \to$ hadrons
~ 3780	[1] ABLIKIM	24E	BES3	$e^+ e^- \to$ light hadrons

[1] Fit to cross sections for $\sqrt{s}$ = 3645 to 3871 MeV. NODE=M300A11;LINKAGE=A

$\psi(3810)$ $I^G(J^{PC}) = ?^?(1^{--})$ NODE=M300A12

MASS (MeV)	DOCUMENT ID		TECN	COMMENT
3804.5±0.9±0.9	[1] ABLIKIM	24BO	BES3	$e^+ e^- \to$ hadrons
~ 3806	[1] ABLIKIM	24E	BES3	$e^+ e^- \to$ light hadrons

[1] Fit to cross sections for $\sqrt{s}$ = 3645 to 3871 MeV. NODE=M300A12;LINKAGE=A

$h_c(4000)$ $I^G(J^{PC}) = 0^-(1^{+-})$ NODE=M300A15

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
4000^{+17+29}_{-14-22}	184^{+71+97}_{-45-61}	1.6k	[1] AAIJ	24AB	LHCB	$B^+ \to D^{*\pm} D^{\mp} K^+$

[1] From a simultaneous amplitude analysis of $B^+ \to D^{*+} D^- K^+$, $B^+ \to D^{*-} D^+ K^+$ and their c.c. NODE=M300A15;LINKAGE=A

$\chi_{c1}(4010)$ $I^G(J^{PC}) = 0^+(1^{++})$ NODE=M300A17

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$4012.5^{+3.6+4.1}_{-3.9-3.7}$	$62.7^{+7.0+6.4}_{-6.4-6.6}$	1.6k	[1] AAIJ	24AB	LHCB	$B^+ \to D^{*\pm} D^{\mp} K^+$

[1] From a simultaneous amplitude analysis of $B^+ \to D^{*+} D^- K^+$, $B^+ \to D^{*-} D^+ K^+$ and their c.c. NODE=M300A17;LINKAGE=A

$h_c(4300)$ $I^G(J^{PC}) = 0^-(1^{+-})$ NODE=M300A16

MASS (MeV)	WIDTH (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$4307.3^{+6.4+3.3}_{-6.6-4.1}$	58^{+28+28}_{-16-25}	1.6k	[1] AAIJ	24AB	LHCB	$B^+ \to D^{*\pm} D^{\mp} K^+$

[1] From a simultaneous amplitude analysis of $B^+ \to D^{*+} D^- K^+$, $B^+ \to D^{*-} D^+ K^+$ and their c.c. NODE=M300A16;LINKAGE=A

$\psi(4500)$ $I^G(J^{PC}) = 0^-(1^{--})$ NODE=M300K39

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
$4467.4^{+\ 7.2+\ 3.2}_{-\ 5.4-\ 2.7}$	$62.8^{+19.2+9.9}_{-14.4-7.0}$	[1] ABLIKIM	25B	BES3	$e^+ e^- \to \pi^+ \pi^- h_c(1P)$
4544.2±18.7± 1.7	116.1 ± 33.5 ± 1.7	[2] ABLIKIM	24D	BES3	$e^+ e^- \to \omega \gamma J/\psi$
4469.1±26.2± 3.6	246.3 ± 36.7 ± 9.4	[3] ABLIKIM	23X	BES3	$e^+ e^- \to D^{*0} D^{*-} \pi^+$
4484.7±13.3±24.1	111.1 ± 30 ± 15.2	[4] ABLIKIM	22AU	BES3	$e^+ e^- \to K^+ K^- J/\psi$

[1] Using three coherent Breit-Wigner functions between 4.009 and 4.950 GeV. NODE=M300K39;LINKAGE=D

[2] Assuming one single Breit-Wigner resonance in $\omega \chi_{c2}(1P)$ ($\chi_{c2} \to \gamma J/\psi$). Measured $\Gamma_{ee} \cdot$ B($\omega \chi_{c1}(1P)$) = 1.86 ± 0.32 ± 0.13 eV. NODE=M300K39;LINKAGE=C

[3] From a cross-section measurement of $e^+ e^- \to D^{*0} D^{*-} \pi^+$ between 4.189 and 4.951 GeV, assuming a coherent sum of 3 Breit-Wigner resonances plus a continuum amplitude. $\Gamma(e^+ e^-)$·B($D^{*0} D^{*-} \pi^+$) = 107–1744 eV depending on solutions I – VIII with the same fit qualities. The two other resonances have masses (widths) 4209.6 ± 7.5 (81.6 ± 19.9) MeV and 4675.3 ± 29.7 (218.3 ± 73.5) MeV. NODE=M300K39;LINKAGE=A

[4] ABLIKIM 22AU cross sections analysis of the process $e^+e^- \to K^+K^- J/\psi$ at c.m. energies 4.127–4.600 GeV from 15.6 fb^{-1} of data. NODE=M300K39;LINKAGE=B

$T_{c\overline{c}\overline{s}1}(4600)^0$ $I^G(J^{PC}) = 1/2^?(1^{+?})$

NODE=M300A22
NODE=M300A22

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
4578±10±18	133 ± 28 ± 69	AAIJ	25Q	LHCB	$B^+ \to \psi(2S) K^+ \pi^+ \pi^-$

$T_{c\overline{c}\overline{s}1}(4900)^0$ $I^G(J^{PC}) = 1/2^?(1^{+?})$

NODE=M300A20
NODE=M300A20

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
4925±22±47	255 ± 55 ± 127	AAIJ	25Q	LHCB	$B^+ \to \psi(2S) K^+ \pi^+ \pi^-$

$T_{c\overline{c}\overline{s}1}(5200)^0$ $I^G(J^{PC}) = 1/2^?(1^{-?})$

NODE=M300A21
NODE=M300A21

MASS (MeV)	WIDTH (MeV)	DOCUMENT ID		TECN	COMMENT
5225±86±181	226 ± 76 ± 374	AAIJ	25Q	LHCB	$B^+ \to \psi(2S) K^+ \pi^+ \pi^-$

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