Reference = ACHASOV 16D; PR D94 112001
Verifier code = DRUZHININ

Normally we send all verifications for one experiment to one person, usually the spokesperson or data-analysis coordinator, who then distributes them to the appropriate people. Please tell us if we should send the verifications for your experiment to someone else.

PLEASE READ NOW

PLEASE REPLY WITHIN ONE WEEK

Vladimir P. Druzhinin

EMAIL: v.p.druzhinin@inp.nsk.su

March 20, 2017

Dear Colleague,

(1) Please check the results of your experiment carefully. They are marked.

(2) Please reply within one week.

(3) Please reply even if everything is correct.

(4) IMPORTANT!! Please tell WHICH papers you are verifying. We have lots of requests out.

(5) Feel free to make comments on our treatment of any of the results (not just yours) you see.

Thank you for helping us make the Review accurate and useful.

Sincerely,

Simon Eidelman
BINP, Budker Inst. of Nuclear Physics
Prospekt Lavrent'eva 11
RU-630090 Novosibirsk
Russian Federation

EMAIL: simon.eidelman@cern.ch

LIGHT UNFLAVORED MESONS ($S = C = B = 0$)

NODE=MXXX005

For $I = 1$ (π, b, ρ, a): $u\overline{d}$, $(u\overline{u}-d\overline{d})/\sqrt{2}$, $d\overline{u}$;
for $I = 0$ (η, η', h, h', ω, ϕ, f, f'): $c_1(u\overline{u} + d\overline{d}) + c_2(s\overline{s})$

NODE=MXXX005

NODE=M105

$\rho(1450)$

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

See our mini-review under the $\rho(1700)$.

NODE=M105

$\rho(1450)$ MASS

NODE=M105205

$\omega\pi$ MODE

NODE=M105M3
NODE=M105M3

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA 1510 ± 7	10.2k	[1] ACHASOV	16D	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$
$1544\pm22^{+11}_{-46}$	821	[2] MATVIENKO	15	BELL	$\overline{B}^0 \to D^{*+}\omega\pi^-$
1491 ± 19	7815	[3] ACHASOV	13	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$
$1582\pm17\pm25$	2382	[4] AKHMETSHIN	03B	CMD2	$e^+e \to \pi^0\pi^0\gamma$
$1349\pm25^{+10}_{-5}$	341	[5] ALEXANDER	01B	CLE2	$B \to D^{(*)}\omega\pi^-$
1523 ± 10		[6] EDWARDS	00A	CLE2	$\tau^- \to \omega\pi^-\nu_\tau$
1463 ± 25		[7] CLEGG	94	RVUE	
1250		[8] ASTON	80C	OMEG	20–70 $\gamma p \to \omega\pi^0 p$
1290 ± 40		[8] BARBER	80C	SPEC	3–5 $\gamma p \to \omega\pi^0 p$

OCCUR=2

YOUR NOTE

[1] From a phenomenological model based on vector meson dominance with interfering $\rho(770)$, $\rho(1450)$, and $\rho(1700)$. The $\rho(1700)$ mass and width are fixed at 1720 MeV and 250 MeV, respectively. Systematic uncertainties not estimated. Supersedes ACHASOV 13.

NODE=M105M3;LINKAGE=D

[2] Using Breit-Wigner parameterization of the $\rho(1450)$ and assuming equal probabilities of the $\rho(1450) \to \pi\pi$ and $\rho(1450) \to \omega\pi$ decays.

NODE=M105M3;LINKAGE=C

[3] 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=M105M3;LINKAGE=AC

[4] Using the data of AKHMETSHIN 03B and BISELLO 91B assuming the $\omega\pi^0$ and $\pi^+\pi^-$ mass dependence of the total width. $\rho(1700)$ mass and width fixed at 1700 MeV and 240 MeV, respectively.

NODE=M105M3;LINKAGE=HK

[5] Using Breit-Wigner parameterization of the $\rho(1450)$ and assuming the $\omega\pi^-$ mass dependence for the total width.

NODE=M105M3;LINKAGE=3Z

[6] Mass-independent width parameterization. $\rho(1700)$ mass and width fixed at 1700 MeV and 235 MeV respectively.

NODE=M105M;LINKAGE=E1

[7] Using data from BISELLO 91B, DOLINSKY 86 and ALBRECHT 87L.

NODE=M105M3;LINKAGE=B

[8] Not separated from $b_1(1235)$, not pure $J^P = 1^-$ effect.

NODE=M105M3;LINKAGE=A

$\rho(1450)$ WIDTH

NODE=M105210

$\omega\pi$ MODE

NODE=M105W3
NODE=M105W3

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA 440 ± 40	10.2k	[1] ACHASOV	16D	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$
$303^{+\ 31+69}_{-\ 52-\ 7}$	821	[2] MATVIENKO	15	BELL	$\overline{B}^0 \to D^{*+}\omega\pi^-$
$429\pm\ 42\pm10$	2382	[3] AKHMETSHIN	03B	CMD2	$e^+e \to \pi^0\pi^0\gamma$
$547\pm\ 86^{+46}_{-45}$	341	[4] ALEXANDER	01B	CLE2	$B \to D^{(*)}\omega\pi^-$
$400\pm\ 35$		[5] EDWARDS	00A	CLE2	$\tau^- \to \omega\pi^-\nu_\tau$
$311\pm\ 62$		[6] CLEGG	94	RVUE	
300		[7] ASTON	80C	OMEG	20–70 $\gamma p \to \omega\pi^0 p$
320 ± 100		[7] BARBER	80C	SPEC	3–5 $\gamma p \to \omega\pi^0 p$

OCCUR=3

YOUR NOTE

[1] From a phenomenological model based on vector meson dominance with interfering $\rho(770)$, $\rho(1450)$, and $\rho(1700)$. The $\rho(1700)$ mass and width are fixed at 1720 MeV and 250 MeV, respectively. Systematic uncertainties not estimated. Supersedes ACHASOV 13. NODE=M105W3;LINKAGE=D

[2] Using Breit-Wigner parameterization of the $\rho(1450)$ and assuming equal probabilities of the $\rho(1450) \to \pi\pi$ and $\rho(1450) \to \omega\pi$ decays. NODE=M105W3;LINKAGE=C

[3] Using the data of AKHMETSHIN 03B and BISELLO 91B assuming the $\omega\pi^0$ and $\pi^+\pi^-$ mass dependence of the total width. $\rho(1700)$ mass and width fixed at 1700 MeV and 240 MeV, respectively. NODE=M105W3;LINKAGE=HK

[4] Using Breit-Wigner parameterization of the $\rho(1450)$ and assuming the $\omega\pi^-$ mass dependence for the total width. NODE=M105W3;LINKAGE=3Z

[5] Mass-independent width parameterization. $\rho(1700)$ mass and width fixed at 1700 MeV and 235 MeV respectively. NODE=M105W;LINKAGE=E1

[6] Using data from BISELLO 91B, DOLINSKY 86 and ALBRECHT 87L. NODE=M105W3;LINKAGE=B

[7] Not separated from $b_1(1235)$, not pure $J^P = 1^-$ effect. NODE=M105W3;LINKAGE=A

$\rho(1450)$ Γ(i)/Γ(total) × $\Gamma(e^+e^-)/\Gamma$(total)

NODE=M105230

$\Gamma(\omega\pi)/\Gamma_{total} \times \Gamma(e^+e^-)/\Gamma_{total}$ $\Gamma_3/\Gamma \times \Gamma_9/\Gamma$

NODE=M105R05
NODE=M105R05

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA 2.1 ± 0.4	10.2k	[1] ACHASOV	16D	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$ OCCUR=3
5.3 ± 0.4	7815	[2] ACHASOV	13	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$

YOUR NOTE

[1] From a phenomenological model based on vector meson dominance with interfering $\rho(770)$, $\rho(1450)$, and $\rho(1700)$. The $\rho(1700)$ mass and width are fixed at 1720 MeV and 250 MeV, respectively. Systematic uncertainties not estimated. Supersedes ACHASOV 13. NODE=M105R05;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=M105R05;LINKAGE=AC

$\rho(1450)$ REFERENCES

NODE=M105

YOUR PAPER	ACHASOV	16D	PR D94 112001	M.N. Achasov *et al.*	(SND Collab.)	REFID=57618
	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
	AKHMETSHIN	03B	PL B562 173	R.R. Akhmetshin *et al.*	(Novosibirsk CMD-2 Collab.)	REFID=49406
	ALEXANDER	01B	PR D64 092001	J.P. Alexander *et al.*	(CLEO Collab.)	REFID=48391
	EDWARDS	00A	PR D61 072003	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=47465
	CLEGG	94	ZPHY C62 455	A.B. Clegg, A. Donnachie	(LANC, MCHS)	REFID=44081
	BISELLO	91B	NPBPS B21 111	D. Bisello	(DM2 Collab.)	REFID=41752
	ALBRECHT	87L	PL B185 223	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40418
	DOLINSKY	86	PL B174 453	S.I. Dolinsky *et al.*	(NOVO)	REFID=20246
	ASTON	80C	PL 92B 211	D. Aston	(BONN, CERN, EPOL, GLAS, LANC+)	REFID=20652
	BARBER	80C	ZPHY C4 169	D.P. Barber *et al.*	(DARE, LANC, SHEF)	REFID=20653

NODE=M065

$\rho(1700)$

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

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

NODE=M065240

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

NODE=M065R01
NODE=M065R01

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA 0.09 ± 0.05	10.2k	[1] ACHASOV	16D	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$ OCCUR=4
1.7 ± 0.4	7815	[2] ACHASOV	13	SND	1.05–2.00 $e^+e^- \to \pi^0\pi^0\gamma$

YOUR NOTE

[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

$\rho(1700)$ REFERENCES

NODE=M065

YOUR PAPER	ACHASOV	16D	PR D94 112001	M.N. Achasov *et al.*	(SND Collab.)	REFID=57618
	ACHASOV	13	PR D88 054013	M.N. Achasov *et al.*	(SND Collab.)	REFID=55584